

---

# **ENVIRONMENTAL ASSESSMENT**



*Proposed Construction and Operation  
of a New Aero Club Facility*

---

**DOVER AIR FORCE BASE, DELAWARE**

---



**FINAL**

**March 2005**

<b>Report Documentation Page</b>			Form Approved OMB No. 0704-0188					
<p>Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.</p>								
1. REPORT DATE <b>MAR 2005</b>	2. REPORT TYPE	3. DATES COVERED <b>00-00-2005 to 00-00-2005</b>						
<b>4. TITLE AND SUBTITLE</b> <b>Environmental Assessment Proposed Construction and Operation of a New Aero Club Facility Dover Air Force Base, Delaware</b>				5a. CONTRACT NUMBER				
				5b. GRANT NUMBER				
				5c. PROGRAM ELEMENT NUMBER				
<b>6. AUTHOR(S)</b>				5d. PROJECT NUMBER				
				5e. TASK NUMBER				
				5f. WORK UNIT NUMBER				
<b>7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)</b> <b>Air Mobility Command, Scott AFB, IL, 62225</b>			8. PERFORMING ORGANIZATION REPORT NUMBER					
<b>9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)</b>				10. SPONSOR/MONITOR'S ACRONYM(S)				
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)				
<b>12. DISTRIBUTION/AVAILABILITY STATEMENT</b> <b>Approved for public release; distribution unlimited</b>								
<b>13. SUPPLEMENTARY NOTES</b>								
<b>14. ABSTRACT</b> <p><b>The 436 Mission Support Group/Services Squadron, Dover Air Force Base, on behalf of a Morale, Welfare and Recreation (MWR) activity, the Dover AFB Aero Club, proposes to construct a 5900 square foot mixed use office, flight dispatch and maintenance facility in the southeast area of the base. Two alternatives were considered: the proposed action and a no-action alternative. The construction activities would occur generally south of Taxiway Foxtrot in the vicinity of Building 1303, the present location of the Aero Club. This Environmental Assessment analyzes the potential effects to the natural and human environment that could result from implementation of the proposed action and the no-action alternative. The potential environmental effects from the implementation of the proposed action are those that would be associated with short-term land clearing, construction, utility connection and roadway replacement activities. Resources evaluated include water quality, biological resources, air quality, socioeconomic resources, historic or archaeological resources, safety and occupational health, and hazardous materials and substances. Direct and indirect effects were assessed for each environmental resource or issue, considering short-term and long-term project effects and cumulative impacts. Although construction and installation activities would affect the natural and human environment, most impacts would be temporary in nature with insignificant permanent impacts.</b></p>								
<b>15. SUBJECT TERMS</b>								
<b>16. SECURITY CLASSIFICATION OF:</b> <table border="1"> <tr> <td>a. REPORT <b>unclassified</b></td> <td>b. ABSTRACT <b>unclassified</b></td> <td>c. THIS PAGE <b>unclassified</b></td> </tr> </table>			a. REPORT <b>unclassified</b>	b. ABSTRACT <b>unclassified</b>	c. THIS PAGE <b>unclassified</b>	<b>17. LIMITATION OF ABSTRACT</b> <b>Same as Report (SAR)</b>	<b>18. NUMBER OF PAGES</b> <b>90</b>	<b>19a. NAME OF RESPONSIBLE PERSON</b>
a. REPORT <b>unclassified</b>	b. ABSTRACT <b>unclassified</b>	c. THIS PAGE <b>unclassified</b>						





DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 436<sup>TH</sup> AIRLIFT WING (AMC)

MEMORANDUM FOR 436 CES/CEV

MAR 07 2005

FROM: 436 MSG/CC

SUBJECT: Finding of No Significant Impact (FONSI) – Construction and Operation of a New Aero Club Facility

**Background:** The existing building from which the Aero Club operates lies within a clear zone associated with Runway 1/19. The building has deficiencies and a new facility, constructed to modern standards and located outside of the clear zone, is required.

Pursuant to the National Environmental Policy Act (NEPA), the Council of Environmental Quality (CEQ) implementing regulations, (40 CFR 1500-1508) and the Air Force Environmental Impact Analysis Process (32 CFR 989), the Air Force has prepared an Environmental Assessment (EA) analyzing the potential environmental impacts of the Proposed Action to construct a new Aero Club facility at the southeast corner of Dover AFB south of taxiway Foxtrot. This ramp area is commonly referred to as the "Christmas Tree" ramp, reflecting its layout and design as part of its former use for staging alert aircraft. The EA evaluated potential impacts from the Proposed Action and a No-Action alternative. Cumulative impacts from the other actions occurring and the Proposed Action were also evaluated.

**Proposed Action:** The Air Force proposes to construct, equip and operate from non-appropriated funds a new facility for the Aero Club. The facility would be located in the vicinity of the existing Aero Club office and administrative location (Building 1303). The present structure is scheduled for demolition because its location within a clear zone and age make renovation infeasible. An EA was prepared and Finding of No Significant Impact (FONSI) was adopted in September 2004 for that action.

Aircraft maintenance presently occurs on the opposite side of the airfield at Building 918. Upon the completion of the construction of the new facility, the Aero Club would consolidate its aircraft maintenance function into the new facility, no longer using Building 918 for maintenance purposes.

**Alternatives to the Proposed Action:** The Air Force considered a no action alternative that involved the indefinite operation of the Aero Club from the modular office trailers or other, existing administrative space and Building 918 without constructing any new facilities. The Air Force also considered refurbishing Building 1315 for office and flight planning usage; however, since this alternative did not meet the underlying objective for the proposed action, this alternative was not subjected to a detailed analysis.

*America's Preeminent Expeditionary Airlift Team*

### **ENVIRONMENTAL IMPACTS FROM THE PROPOSED ACTION**

Potential effects from the implementation of the Proposed Action, including cumulative impacts from other actions, are summarized below:

**Water Resources:** No adverse impacts to water resources within or adjacent to the project area are anticipated from implementation of the Proposed Action. The Proposed Action incorporates the requirement to develop and adhere to a sediment and erosion control plan which would minimize potential impacts to surface water features that could result from construction activities. It is noted that the groundwater below the project site is contaminated with chlorinated solvents; however, the depth of the contamination plume is well below the level that would be excavated for a slab on grade building foundation.

**Biological Resources:** Implementation of the Proposed Action would not result in adverse impacts to biological resources. The project area is previously disturbed and regularly mowed which limits the potential for new impacts to vegetation and habitat. Additionally, no disturbance to habitat for a rare, endangered or threatened species is proposed as no such habitat exists within or adjacent to the project area.

**Air Quality:** Construction activities inherent in the Proposed Action would be expected to have minor, temporary impacts on local air quality from grading operations and use of construction equipment. Reactive organic gasses that result from emissions from internal combustion engines and fugitive dust from soil disturbance would occur. However, modeling indicates that the estimated emissions are not expected to exceed *de minimis* levels established by the Environmental Protection Agency for non-attainment areas such as Kent County, Delaware. Nor would the emissions violate standards identified in the State Implementation Plan or National Ambient Air Quality Standards.

**Social or Economic Resources:** No significant impacts to socioeconomics would be anticipated from construction of a new facility and continued operation of the Aero Club. Construction spending would be short-term, lasting between 12 to 18 months. The increased spending and economic flowdown would be minor and temporary when compared to the regional economic generation. Existing Aero Club economic activity from aircraft rental, flight instruction and sales of accessories would continue as before, moving from two buildings into one; no change in rental, instructional or sales revenue is expected.

**Historic Resources:** Construction of a new facility would not adversely affect cultural or historic resources.

**Safety:** No adverse impacts to occupational health and safety are expected from construction activities. All construction and disturbance activities would be conducted in accordance with Occupational Safety and Health Administration and National Institute of Occupational Safety and Health requirements outlined in Title 29 of the CFR. Construction contracts let by the Air Force require adherence to these standards. Day-to-day flight operations and maintenance activities conducted by the Aero Club members on Dover AFB are presently performed in accordance with acceptable Air Force safety regulations, published Air Force Technical Orders,

*America's Preeminent Expeditionary Airlift Team*

and standards prescribed by Air Force Occupational Safety and Health requirements and this would not change.

**Hazardous Materials and Substances:** Construction activities associated with the Proposed Action potentially could disturb or generate hazardous wastes or disturb known hazardous materials facilities. Examples of hazardous materials that would be expected to be generated likely include fuels, paints, glues, asphalt materials and similar construction materials. Most of these would be entirely consumed; residue that was not would be disposed of in approved facilities in accordance with all applicable Air Force, local, state and Federal requirements. The construction activities would occur in the vicinity of Landfill 19, an IRP site. While a disturbance is possible, it is not likely, given the expected depth of excavation activities. The ongoing operation of the Aero Club is not expected to generate appreciably different types or quantities of hazardous materials or wastes.

**Irreversible and Irretrievable Commitment of Resources:** The Proposed Action would irretrievably commit manpower and materials required for the construction of the facilities. Ongoing aircraft operations and temporary operation of construction machinery would consume petroleum, oil and lubricant products.

**FINDING OF NO SIGNIFICANT IMPACT:** Based upon my review of the facts and analyses contained in the attached EA, I conclude that the Proposed Action will not have a significant environmental impact, either directly or cumulatively in conjunction with other projects at Dover AFB. Accordingly, the requirements of NEPA, CEQ regulations and the Air Force Environmental Impact Analysis Process are fulfilled and the preparation of an Environmental Impact Statement is not required.



ROBERT J. KING, Colonel, USAF  
Commander, 436<sup>th</sup> Mission Support Group

Attachments:

1. AF Form 813
2. Environmental Assessment

*America's Preeminent Expeditionary Airlift Team*

FONSI

---

*This page intentionally left blank*

## **ENVIRONMENTAL ASSESSMENT – PROPOSED CONSTRUCTION AND OPERATION OF A NEW AERO CLUB FACILITY**

### **DOVER AIR FORCE BASE, DELAWARE**

**Lead Agency:** Department of the Air Force

**Proposed Action:** Construct New Building and Consolidate Office/Administrative Operations with Maintenance Operations in One Facility.

**Written comments and inquiries regarding this document should be directed to:** Mr. Steven Seip, 436 CES/CEV, 600 Chevron Avenue, Dover Air Force Base, DE 19902-5600, (302) 677-6839.

**Report Designation:** Environmental Assessment

**Abstract:** The 436 Mission Support Group/Services Squadron, Dover Air Force Base, on behalf of a Morale, Welfare and Recreation (MWR) activity, the Dover AFB Aero Club, proposes to construct a 5900 square foot mixed use office, flight dispatch and maintenance facility in the southeast area of the base. Two alternatives were considered: the proposed action and a no-action alternative. The construction activities would occur generally south of Taxiway Foxtrot in the vicinity of Building 1303, the present location of the Aero Club.

This Environmental Assessment analyzes the potential effects to the natural and human environment that could result from implementation of the proposed action and the no-action alternative. The potential environmental effects from the implementation of the proposed action are those that would be associated with short-term land clearing, construction, utility connection and roadway replacement activities. Resources evaluated include water quality, biological resources, air quality, socioeconomic resources, historic or archaeological resources, safety and occupational health, and hazardous materials and substances. Direct and indirect effects were assessed for each environmental resource or issue, considering short-term and long-term project effects and cumulative impacts. Although construction and installation activities would affect the natural and human environment, most impacts would be temporary in nature with insignificant permanent impacts.

FONSI

---

*This page intentionally left blank*

## TABLE OF CONTENTS

<b>SECTION 1.0</b>	<b>PURPOSE AND NEED FOR THE ACTION .....</b>	<b>1-1</b>
1.1	INTRODUCTION AND BACKGROUND .....	1-1
1.2	PAST, PRESENT, AND REASONABLY FORESEEABLE FUTURE ACTIONS AT DOVER AIR FORCE BASE .....	1-3
1.3	PURPOSE AND NEED FOR THE PROPOSED ACTION.....	1-3
1.4	SCOPE OF THE ENVIRONMENTAL ASSESSMENT .....	1-6
1.5	ORGANIZATION OF THE ENVIRONMENTAL ASSESSMENT .....	1-7
<b>SECTION 2.0</b>	<b>ALTERNATIVES INCLUDING THE PROPOSED ACTION .....</b>	<b>2-1</b>
2.1	IDENTIFICATION OF SELECTION CRITERIA .....	2-1
2.2	DESCRIPTION OF THE PROPOSED ACTION .....	2-2
2.2.1	Construction Activities .....	2-4
2.2.2	Permits and Notifications.....	2-5
2.2.3	Operations.....	2-5
2.3	ALTERNATIVES TO THE PROPOSED ACTION .....	2-5
2.3.1	No Action Alternative.....	2-5
2.3.2	Alternatives Eliminated from Detailed Analysis – Renovation of Building 1315 .....	2-6
2.4	RESOURCES AND/OR ISSUES ELIMINATED FROM DETAILED ANALYSIS IN THIS ENVIRONMENTAL ASSESSMENT .....	2-6
2.4.1	Geology and Soils.....	2-6
2.4.2	Land Use.....	2-7
2.4.3	Infrastructure, Including Utilities and Transportation .....	2-7
2.4.4	Noise.....	2-7
2.5	COMPARISON OF THE ALTERNATIVES .....	2-8
<b>SECTION 3.0</b>	<b>AFFECTED ENVIRONMENT.....</b>	<b>3-1</b>
3.1	WATER RESOURCES .....	3-1
3.1.1	Surface Waters.....	3-2
3.1.2	Groundwater .....	3-2
3.2	BIOLOGICAL RESOURCES.....	3-2
3.2.1	Vegetation.....	3-3
3.2.2	Wildlife .....	3-3
3.2.3	Protected Species .....	3-3
3.3	AIR QUALITY .....	3-3
3.4	SOCIOECONOMIC RESOURCES .....	3-5
3.4.1	Demographics .....	3-6
3.4.2	Limited English Proficiency .....	3-8
3.4.3	Employment and Income .....	3-8
3.5	HISTORIC OR ARCHEOLOGICAL RESOURCES .....	3-10
3.5.1	Historic Resources .....	3-10
3.5.2	Archeological Resources .....	3-11
3.6	SAFETY .....	3-12
3.7	HAZARDOUS MATERIALS AND SUBSTANCES .....	3-13
<b>SECTION 4.0</b>	<b>ENVIRONMENTAL CONSEQUENCES.....</b>	<b>4-1</b>
4.1	WATER RESOURCES .....	4-2
4.1.1	No Action Alternative.....	4-2
4.1.2	Proposed Action.....	4-2
4.1.3	Cumulative Impacts .....	4-2

---

## TABLE OF CONTENTS

---

4.2	BIOLOGICAL RESOURCES.....	4-2
4.2.1	No Action Alternative.....	4-2
4.2.2	Proposed Action.....	4-2
4.2.3	Cumulative Impacts .....	4-3
4.3	AIR QUALITY .....	4-3
4.3.1	No Action Alternative.....	4-3
4.3.2	Proposed Action.....	4-3
4.3.3	Cumulative Impacts .....	4-4
4.4	SOCIAL OR ECONOMIC RESOURCES .....	4-4
4.4.1	No Action Alternative.....	4-4
4.4.2	Proposed Action.....	4-4
4.4.3	Cumulative Impacts .....	4-5
4.5	HISTORIC OR ARCHEOLOGICAL RESOURCES .....	4-5
4.5.1	No Action Alternative.....	4-5
4.5.2	Proposed Action.....	4-5
4.5.3	Cumulative Impacts .....	4-6
4.6	SAFETY .....	4-6
4.6.1	No Action Alternative.....	4-6
4.6.2	Proposed Action.....	4-6
4.6.3	Cumulative Impacts .....	4-6
4.7	HAZARDOUS MATERIALS AND SUBSTANCES .....	4-7
4.7.1	No Action Alternative.....	4-7
4.7.2	Proposed Action.....	4-7
4.7.3	Cumulative Impacts .....	4-7
<b>SECTION 5.0</b>	<b>LIST OF PREPARERS.....</b>	<b>5-1</b>
<b>SECTION 6.0</b>	<b>DISTRIBUTION LIST AND AGENCIES AND INDIVIDUALS CONTACTED.....</b>	<b>6-1</b>
6.1	DISTRIBUTION OF THE DRAFT ENVIRONMENTAL ASSESSMENT.....	6-1
6.2	COMMENTS AND RESPONSES TO COMMENTS .....	6-1
<b>SECTION 7.0</b>	<b>REFERENCES.....</b>	<b>7-1</b>
<b>SECTION 8.0</b>	<b>ACRONYMS AND ABBREVIATIONS.....</b>	<b>8-1</b>
<b>APPENDIX A:</b>	<b>AIR FORCE FORM 813.....</b>	<b>A-1</b>
<b>APPENDIX B:</b>	<b>AIR QUALITY MODELING DATA.....</b>	<b>B-1</b>
<b>APPENDIX C:</b>	<b>REPRESENTATIVE PHOTOGRAPHS.....</b>	<b>C-1</b>
<b>APPENDIX D:</b>	<b>NOTICE OF AVAILABILITY AND AFFIDAVIT OF PUBLICATION.....</b>	<b>D-1</b>
<b>APPENDIX E:</b>	<b>INTERAGENCY COORDINATION LETTERS.....</b>	<b>E-1</b>

## LIST OF FIGURES

<u>No.</u>		<u>Page</u>
Figure 1-1.	General Location of Dover Air Force Base.....	1-2
Figure 1-2.	Current Location of Aero Club Activities.....	1-4
Figure 2-1.	Location of the Proposed Action and Alternative 1 (Eliminated) .....	2-3
Figure 3-1.	Nearby IRP Sites .....	3-15

## LIST OF TABLES

<u>No.</u>		<u>Page</u>
Table 2-1	Summary Comparison of Alternatives Considered.....	2-9
Table 2-2	Alternatives Comparison Matrix Summary – All Resources .....	2-10
Table 3-1	National Ambient Air Quality Standards .....	3-4
Table 3-2	Population Change within the ROI .....	3-7
Table 3-3	2000 Demographic Profile of the ROI .....	3-7
Table 3-4	Poverty Rate Comparisons .....	3-9
Table 3-5	NRHP Status of Archeological Sites on Dover AFB .....	3-12
Table 4-1	Alternatives Comparison Matrix Summary.....	4-1
Table 4-2	Estimated Emissions from the Proposed Action .....	4-4

**TABLE OF CONTENTS**

---

*This page intentionally left blank*

## **SECTION 1.0 PURPOSE AND NEED FOR THE ACTION**

### **1.1 INTRODUCTION AND BACKGROUND**

The US Air Force (Air Force), specifically the 436 Mission Support Group on behalf of its Services Squadron at Dover Air Force Base (AFB), Delaware, proposes to construct a 5900 square foot mixed use office/flight planning and maintenance facility for an existing Aero Club. Background information on Dover AFB as well as its major units and tenants, objectives of the proposed action, the scope of this environmental assessment (EA), decisions that must be made with respect to the proposed action, and applicable regulatory requirements and required coordination with other agencies are described in the following sections.

#### **Dover Air Force Base**

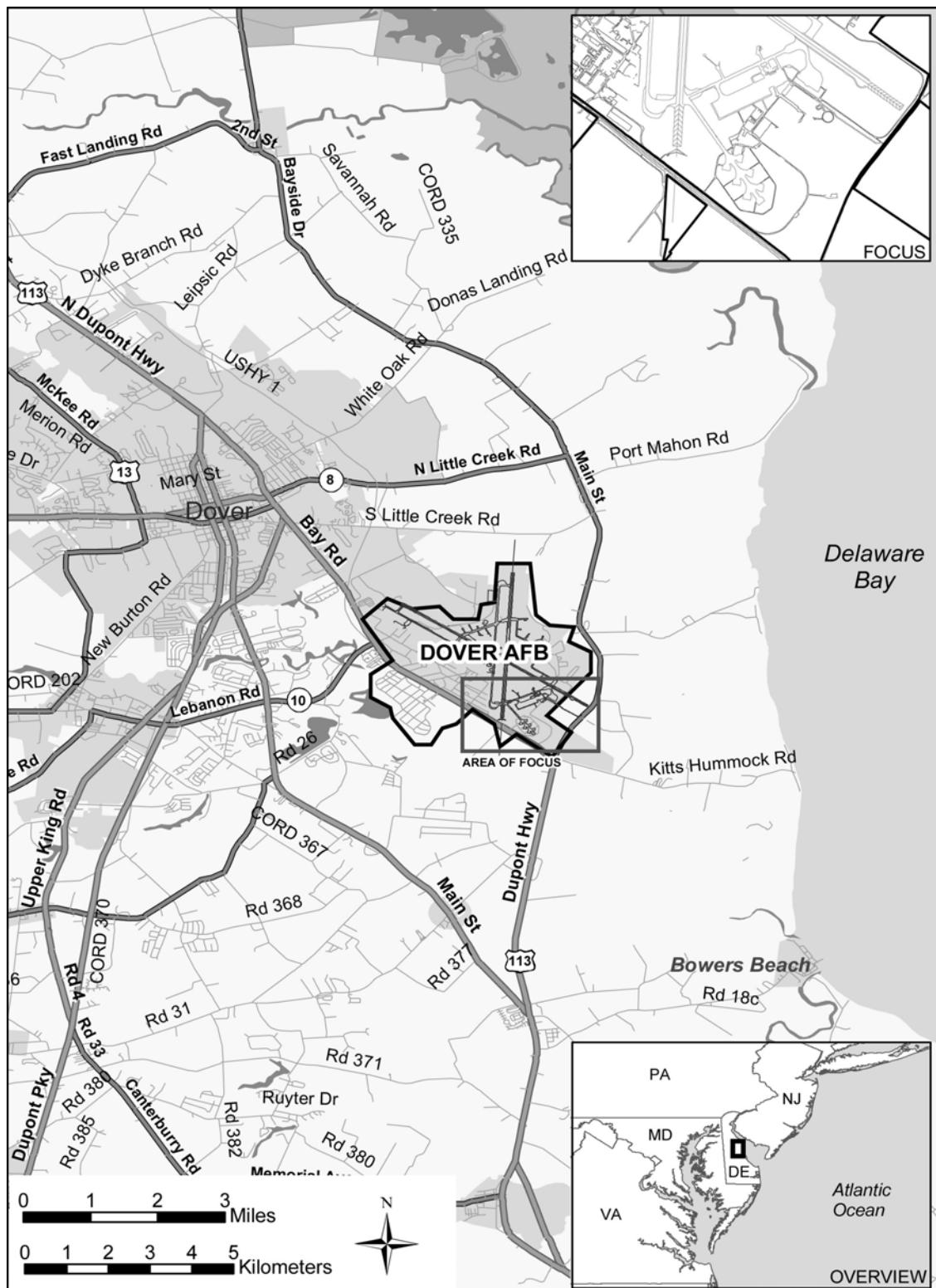
Dover AFB's history began similar to many installations in the United States, as part of the build-up prior to World War II. Construction was begun on Dover Municipal Airport in March 1941 and the first military units began arriving in December 1941 (Lauria 2003). Throughout the decades, Dover AFB has grown and expanded along with its airlift mission capabilities with the majority of facilities and the existing installation layout completed by the early 1960s. By the mid-1970s, Dover AFB and the 436th Military Airlift Wing were the first all C-5 *Galaxy* equipped wing in the Air Force (Lauria 2003).

Dover AFB lies within the city limits of Dover, a part of Kent County, Delaware. See Figure 1-1 for the base and its vicinity. The host unit at Dover AFB is the 436th Airlift Wing (436 AW), and the 436 AW provides command and control, and associated support functions to airmen and aircraft conducting a global airlift mission. Aircraft and crews assigned to Dover AFB provide worldwide movement of cargo and personnel on time-sensitive airlift missions. Aircraft assigned to Dover AFB comprise approximately 25 percent of the Air Force airlift capability (Lauria 2003).

Dover AFB is the largest and busiest aerial port in the Department of Defense and houses the only joint services mortuary on the East Coast. From the period of September 2001 to December 2003, 142,000 personnel were deployed through Dover AFB in support of the Global War on Terrorism. Dover AFB employs approximately 6,600 personnel, both civilian and military (City of Dover 2003). Currently, the base has an economic impact greater than \$470 million annually on the Delaware economy and is considered Delaware's third largest industry.

**SECTION 1.0**  
**PURPOSE AND NEED FOR THE ACTION**

---



**Figure 1-1. General Location of Dover Air Force Base.**

## **1.2 PAST, PRESENT, AND REASONABLY FORESEEABLE FUTURE ACTIONS AT DOVER AIR FORCE BASE**

Environmental effects within this EA are analyzed at short-term, long-term, and cumulative levels. According to the CEQ (1997b) in *Considering Cumulative Effects Under the National Environmental Policy Act*, “[o]nly by reevaluating and modifying alternatives in light of the project cumulative effects can adverse consequences be effectively avoided or minimized.” Cumulative effects should be considered in the scoping process of proposed actions to avoid long-term damage to the natural and man-made environments. Planned activities for Fiscal Year (FY) 2005 include the demolition of approximately 502,893 square feet and the construction of 373,292 square feet. Approximately 56,104 square feet of construction is programmed for FY 06 and at least 3,200 square feet of construction is programmed for FY 07 through FY 10.

## **1.3 PURPOSE AND NEED FOR THE PROPOSED ACTION**

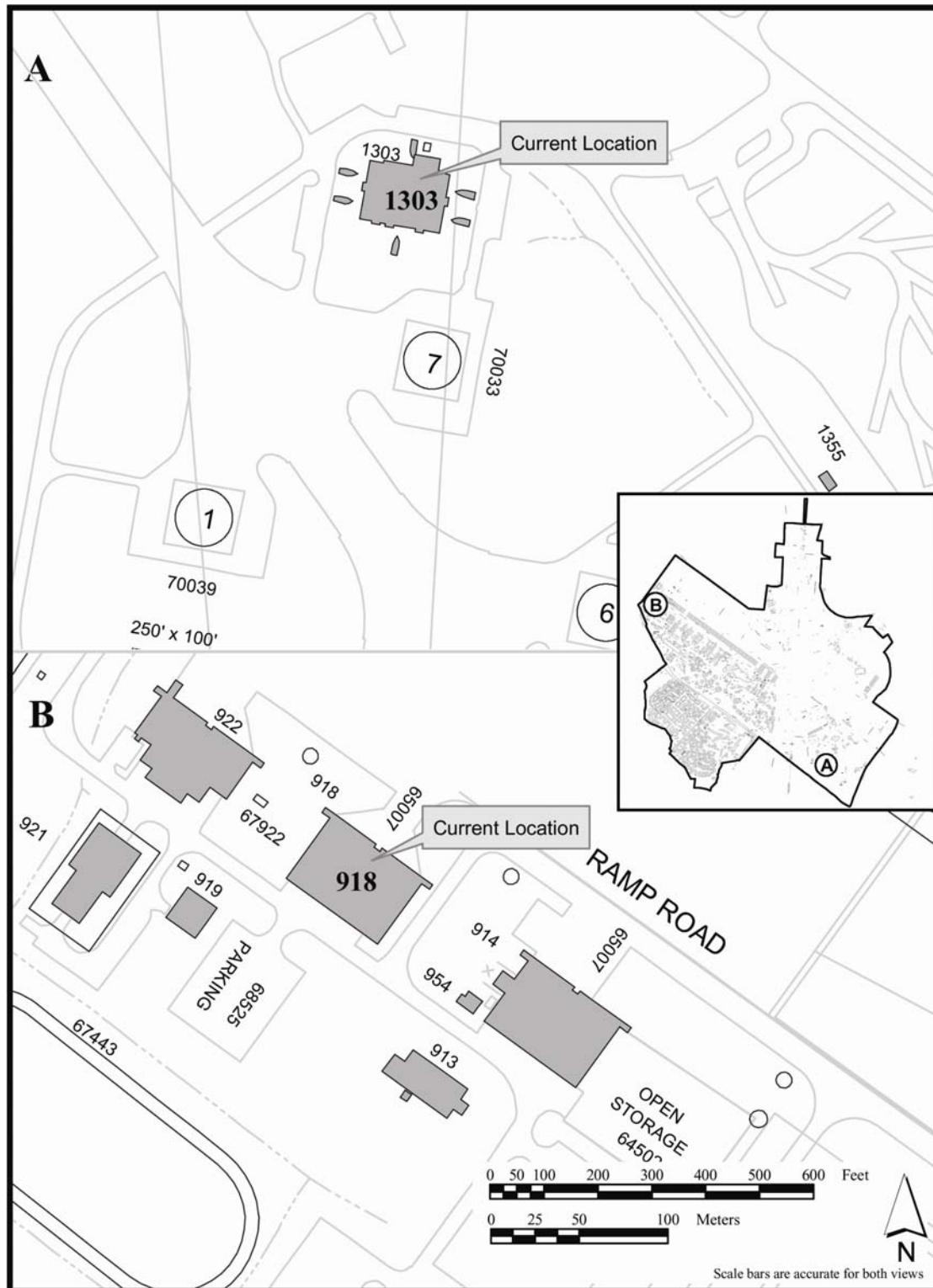
The purpose of the proposed action is to construct an Aero Club that efficiently carries out its goals and objectives of providing a service to the base community as part of a broader Morale, Welfare and Recreation (MWR) program for airmen, civil servants and the military retiree patrons. The military services furnish real estate on their installations to their MWR programs to provide off-duty recreational outlets; examples would be officers/enlisted clubs, riding stables, marinas, self-serve auto repair garages, and skeet shooting ranges. The Dover Aero Club provides general aviation aircraft for rental to authorized patrons, along with flight instruction and sale of various aviation accessories.

These recreational activities are funded from non-appropriated funds and from revenues generated by the activities' ongoing operations. Non-appropriated funds are derived from the “profits” accruing from operations of the Army/Air Force Exchange System operations, including the base exchange (department store), retail gas stations, and similar retail outlets found on military installations. They are so named because the funds are not appropriated by the Congress or generated from tax revenue, the ordinary methods by which the Federal government spends money.

The need for the proposed action is that the Aero Club's current facilities, housed in Building 1303 (office/administration/flight planning) and Building 918 (aircraft maintenance) have certain deficiencies that require remedying. Foremost among the deficiencies is that Building 1303 is located within the airfield clear zone associated with the approach end of Runway 1/19 (Figure 1-2). Runway clear zones are established in standard airfield design publications employed by the Air Force; a clear zone provides an overrun area and safety buffer in the event of aircraft mishaps, either an overrun event or a land-short event. The uses permitted within a clear zone are quite restricted, due to the increased hazard that proximity to a runway end and its associated aircraft

SECTION 1.0  
PURPOSE AND NEED FOR THE ACTION

---



**Figure 1-2. Current Location of Aero Club Activities.**

operations causes. Typically only uses directly required for the functioning of the airfield are permitted such as airfield lighting, instrument approach transmitters, and similar accessories. Apart from regulating the uses of buildings and structures in a clear zone, the airfield design standards also limit types of objects, distinguishing whether they are frangible (easily broken on impact) or not, and limits the placement of non-frangible objects such as buildings in a clear zone.

When the Air Force adopted a standard clear zone width of 1500 feet from the runway centerline, existing buildings often were captured within the new boundary. Building 1303 is one such example and a waiver is required for its continued presence until such time as funds are programmed to remove the hazard. This funding now is in place and the demolition of Building 1303 has been analyzed under a separate EA for which a finding of no significant impact (FONSI) was signed in September 2004 (DAFB 2004a); therefore, the environmental effects associated with the demolition of Building 1303 are not described again as part of this proposed action.

Building 1303 was originally constructed between 1958 and 1960 as a crew readiness facility for KC-97 *Stratotanker* flight crews whose mission was aerial refueling support to the B-52 *Stratofortress* aircraft engaged in the nuclear bomber alert mission. The B-52 *Stratofortress* aircraft were based elsewhere. The facility was subsequently converted to its present use as office and flight planning for the Aero Club (Leister 2005). Though structurally sufficient, it was not engineered to meet the demands of modern-day usage. Problems include an old and insufficient heating, ventilation, and air conditioning system, carpeting laid over existing asbestos tiles, leaking roof, plumbing back-ups due to inadequate fall to the sewer system, inadequate electrical system for modern equipment, such as computer workstations, insufficient data wiring, poor lighting levels and quality, and inadequate security due to the building layout (DAFB 2002). Given the extensive refurbishing required to Building 1303, it would not be a wise use of MWR funds or government real estate to rehabilitate a building whose removal is the object of the Air Force policy on clear zones.

In addition to the building's location and inadequacies, a portion of the Aero Club's maintenance space is within a portion of Building 918 on the opposite side of the installation from Building 1303. This creates a tremendous inefficiency as the movement of Aero Club aircraft from their parking area to the maintenance facility requires crossing of active runways and taxiways and during peak time operations can require transit times of over 20 minutes.

Upon the demolition of Building 1303, the office and administrative functions would be temporarily relocated. One option under consideration is placement of temporary office trailers near the present location of Pad 7, but to the east, outside of the clear zone. These office trailers would be used for office, administrative and flight dispatch functions. The parking apron for the

**SECTION 1.0**  
**PURPOSE AND NEED FOR THE ACTION**

---

existing inventory of aircraft will remain at its present location. Another option under consideration is the use of existing office and administrative space elsewhere on Dover AFB.

**1.4 SCOPE OF THE ENVIRONMENTAL ASSESSMENT**

The National Environmental Policy Act (NEPA) was signed into law in 1970. Its purposes are to ensure the careful consideration of environmental aspects of proposed actions in Federal decision-making processes, and to make environmental information available to decision-makers and the public before decisions are made and actions are taken. It establishes a process for consideration of the potential effects arising from a Federal action by requiring that analysis and disclosure of potential effects occur prior to the undertaking of actions with the potential to have a significant effect on the environment.

This EA was prepared in accordance with the Department of the Air Force regulation, *Environmental Impact Analysis Process (EIAP)*, as set forth at 32 Code of Federal Regulations (CFR) Part 989. This is an implementing regulation, specific to the Air Force and adopted as directed by the regulations promulgated by the Council on Environmental Quality (CEQ), a body established by Congress when they passed NEPA and whose members are appointed by the President. The CEQ regulations may be found at 40 CFR 1500-1508 and they apply across the Executive Branch of the Federal government and are themselves implementing regulations of Section 102 (2) of NEPA (42 United States Code §4321 to §4370d).

This document has been prepared by the Air Force to assess and disclose potential environmental effects that would result from the proposed construction and operation of an Aero Club facility at Dover AFB. It addresses the potential impacts to water resources, including surface and groundwater; biological resources, including vegetation, wildlife, and threatened and/or endangered species; air quality; social or economic resources, including environmental justice; historic or archeological resources; safety; and hazardous materials and substances. Resources and issue areas are eliminated from detailed study within this EA due to their absence at or adjacent to the project area or because standard design and/or engineering techniques avoid impacts. They include: geology and soils; land use; infrastructure, including utilities and transportation; and noise.

The NEPA and CEQ regulations require that the environmental effects of proposed actions and alternatives be considered in the decision-making process. Preparation of an environmental document (this EA) must precede final decisions regarding the proposed action, and the document must be available to inform decision-makers and the public of potential environmental consequences/impacts. The development of this EA allows for public consideration and input concerning the implementation of the proposed construction and operation of a new Aero Club facility at Dover AFB. This EA provides the decision-makers and the public with information required to understand the possible future environmental consequences/impacts of implementing

the proposed action or alternatives. The decision to be made, after a review of the analysis presented in this EA, would be whether to issue a FONSI or to proceed with the development of an environmental impact statement (EIS) to further quantify and detail the potentially significant impacts resulting from implementation of the proposed action or alternatives. While this EA provides information with which to make better decisions about proposed actions, it does not imply project approval or authorization.

## **1.5 ORGANIZATION OF THE ENVIRONMENTAL ASSESSMENT**

This document follows the format established in 32 CFR §989 implementing the CEQ regulations (40 CFR §1502). The document consists of the following sections:

**Section 1.0 – Purpose and Need for the Action:** presents a brief description of the background of the installation; the past, present, and reasonably foreseeable future actions on Dover AFB; the purpose and need for the proposed action; the scope of the environmental review; and a brief description of the EA organization.

**Section 2.0 – Alternatives Including the Proposed Action:** provides a detailed description of the selection criteria and descriptions of the proposed action and alternatives. Section 2.0 also includes a summary of the resource or issue area eliminated from detailed study within this EA. Section 2.0 contains the summary comparison of the proposed action and alternatives and the alternatives comparison matrix.

**Section 3.0 – Affected Environment:** presents the existing baseline environment or present condition of the area(s) potentially affected by the alternatives identified to implement the proposed action. Each environmental resource potentially impacted by the implementation of the proposed action and alternatives is discussed for each impacted resource area.

**Section 4.0 – Environmental Consequences:** provides the scientific and/or analytical basis for comparing the alternatives and describes the probable consequences of each alternative on relevant environmental attributes.

**Section 5.0 – List of Preparers:** provides a list of the document preparers and contributors.

**Section 6.0 – Distribution List and Agencies and Individuals Contacted:** provides a list of persons/agencies contacted in the preparation of this EA. This section also contains a brief summary of comments received and responses to those comments.

**Section 7.0 – References:** provides a list of references used in the preparation of this EA.

SECTION 1.0  
PURPOSE AND NEED FOR THE ACTION

---

**Section 8.0 – Acronyms and Abbreviations:** provides a list of applicable acronyms and abbreviations used throughout the text.

**Appendices** – provide background and supporting information to this EA, as necessary. Appendices included in this EA are Appendix A: Air Force Form 813; Appendix B: Air Quality Modeling Data; Appendix C: Representative Photographs; Appendix D: Notice of Availability and Affidavit of Publication; Appendix E: Interagency Coordination Letters; and Appendix F: Comments and Response to Comments.

## **SECTION 2.0 ALTERNATIVES INCLUDING THE PROPOSED ACTION**

This section of the EA describes the proposed action and the alternatives developed by Dover AFB. This section also describes the process used to objectively identify the reasonable alternatives carried forward for detailed environmental analysis, as well as the reasoning for elimination of alternatives. A comparative summary of the proposed action, alternatives, and how they do or do not meet the selection criteria identified in Section 2.1 is also included.

### **2.1 IDENTIFICATION OF SELECTION CRITERIA**

In an effort to satisfy the purpose and need for the proposed action, several selection criteria were developed to compare and contrast alternative ways of fulfilling the objectives of the proposed action in accordance with 32 CFR §989.8(c). Those specific criteria include:

- 1. A location with access to the flight line, but outside of the taxiway for the C-5 operations.** Dover AFB would like to relocate and consolidate the Aero Club operations near the flight line, but outside of the main airfield operations area (AOA) for the C-5 missions and training activities.
- 2. A location with access to current utilities.** To minimize the costs associated with new infrastructure development, an ideal location would be located near current utilities and infrastructure.
- 3. A location with space sufficient to accommodate an approximately 5,900 square foot building and associated infrastructure, having a total footprint of approximately 30,000 square feet in order to allow for consolidation of Aero Club activities at one location.** Dover AFB would like to relocate and consolidate the Aero Club office/flight planning and operations activities on the east side of Runway 1/19 with its maintenance activities located on the west side of Runway 1/19 in Building 918. This would achieve operational efficiencies that the current locations, on opposite sides of the airfield, prevent.
- 4. Avoid sites identified in the General Plan, Composite Constraints deemed unsuitable because of: a) presence of contaminants listed on the Dover AFB Installation Restoration Program (IRP); b) proximity to sensitive wetlands or containing highly erodible soils; or c) sites located within a Runway Clear Zone, Runway Primary Surface or noise contour in excess of 75 decibel (dB) average day-night sound level (DNL) as shown in the 2000 Dover AFB Air Installation Compatible Use Zone (AICUZ).** Dover AFB would like to locate the Aero Club away from sites with prior contamination to reduce costs associated with environmental clean-up of the contaminants, away from wetlands to prevent their degradation and the

**SECTION 2.0**  
**ALTERNATIVES INCLUDING THE PROPOSED ACTION**

---

associated expense of mitigation and outside of the clear zone and areas of high aircraft noise exposure. Use of the Composite Constraints as a site selection tool helps the installation avoid land use conflicts, violations of law and the difficulties and expenses associated with mitigating avoidable impacts to resources.

**2.2 DESCRIPTION OF THE PROPOSED ACTION**

Dover AFB proposes to construct, equip, and operate with non-appropriated funds a new facility for the Aero Club. This facility would be located on the south end of the installation near the present location of the existing club. This area of the base is referred to as the “Christmas Tree” ramp because of the shape that the apron areas on which the alert aircraft were stationed. This ramp design and the continuous staffing by aerial refueling aircraft crews (Building 1303) enabled a rapid mission response (Figure 2-1). As noted in Section 1.3 Purpose and Need, Building 1303, the former Strategic Air Command readiness crew facility, currently houses the Dover AFB Aero Club activities. The demolition of Building 1303 was analyzed in an EA and a FONSI was signed on 21 September 2004 (DAFB 2004a). Due to the age and significance of the building, it is eligible for listing on the National Register of Historic Places (NRHP). Since it must be demolished to comply with clear zone requirements, the adverse effect to cultural and historic resources that would occur from its demolition will be mitigated through recordation, public outreach, and monitoring and reporting (DAFB 2004b).

The proposed action would satisfy all of the purpose and need criteria. More specifically, the proposed action:

1. Would be a location with access to the flight line, but outside of the taxiway for the C-5 operations.
2. Would be a location with access to current utilities.
3. Would be a location with space for an approximately 5,900 square foot facility and associated infrastructure for a total footprint of approximately 30,000 square feet.
4. Would be a location that avoids development constraints outlined in the General Plan for Dover AFB, including known IRP sites.

SECTION 2.0  
ALTERNATIVES INCLUDING THE PROPOSED ACTION

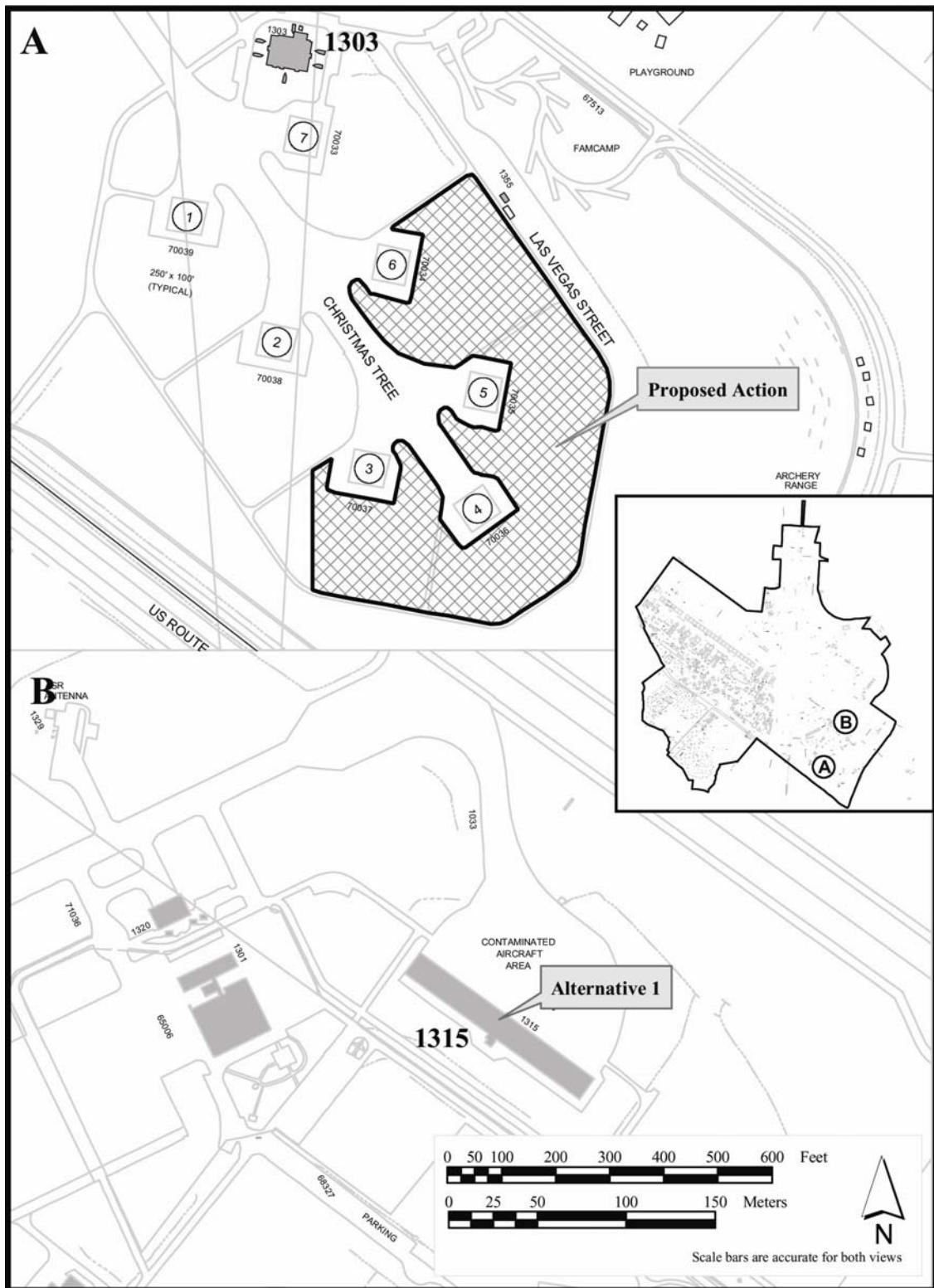


Figure 2-1. Location of the Proposed Action and Alternative 1 (Eliminated).

### **2.2.1 Construction Activities**

The specific design features and architectural details for the proposed building, associated vehicle parking and utility connections have not been developed as of the preparation of this document. Despite the lack of design detail, construction projects on military installations have foreseeable and predictable activities that can be described and assessed.

The proposed facility would include a building of approximately 6000 square feet with a mix of office, flight planning, classroom and aircraft maintenance space included in that number. Including off-street vehicle parking and landscaped areas, a total construction “footprint” of approximately 30,000 square feet would be disturbed. Tie-ins to existing utilities (service connections) and roadways (driveways) would be constructed.

Activities occurring within the building would be typical of those found at a civilian general aviation fixed base operator and flight school: routine office and administrative functions, classroom instruction, membership meetings, individual ground instruction, flight planning and dispatch, aircraft maintenance and inspection, and, sales of aviation accessories (e.g. navigation charts, books, software, headsets, and similar items). These activities would be the same as presently occurs with the operation of the Dover Aero Club, albeit in a single, consolidated location. The existing aircraft parking area and aircraft refueling point (avgas) would remain and are not part of the project.

It is expected that construction activities would begin in FY 06 and last approximately 12 to 18 months. However, the schedule is subject to change and the project may be constructed at an earlier or later date or in different years. Construction activities would typically occur 8 hours per day, 6 days per week; however, the hours/days are subject to change and the project may be constructed at earlier or later times or different days. On-site construction equipment would include the use of heavy trucks or the equivalent. Additional light-duty equipment (e.g., generators, compressors) would also be utilized throughout the duration of activities. All equipment would likely come from local sources and would be brought to the site via local roadways. Equipment maintenance would be conducted off site by the contractor and in accordance with all applicable laws and regulations. The majority of construction materials would likely come from local sources and would be stored at the site for the duration of activities.

All construction materials purchased for this project shall be compliant with affirmative procurement requirements. Within approved guidelines, recyclable materials will be used. No grading plan is currently available; however, preliminary plans indicate that cut-and-fill materials would be balanced so that no new soils would be brought on site or existing soils removed. All construction debris would be recycled or disposed of at an approved landfill in accordance with all applicable Federal, state, and local laws and regulations.

To reduce impacts to local and regional air quality, best management practices (BMP), such as proper maintenance of construction vehicles to reduce combustive emissions, limiting the size of the disturbance area, and watering exposed soils at the beginning and end of daily construction activities, would be implemented to minimize or prevent fugitive dust emissions.

### **2.2.2 Permits and Notifications**

In accordance with Chapter 40, Title 7, Delaware Code, the State of Delaware, Department of Natural Resources and Environmental Control (DNREC) Sediment and Stormwater Program manages the U.S. Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System (NPDES) requirements (construction sites greater than 5 acres [Phase I] and between 1 and 5 acres [Phase II]) within the state. Delaware requires that all construction sites greater than 5,000 square feet must submit and implement a Sediment and Stormwater Management Plan. This Plan requires a design report, all pertinent information from the Sediment and Stormwater Management Plan Checklist, a completed Plan Checklist, project specifications, a preapplication meeting, and weekly reviews by a Certified Construction Reviewer (CCR). The Erosion and Sediment Control portion of the Plan must include BMPs to reduce or eliminate the potential for erosion and sediment deposition from the construction activities. Prior to the start of construction activities, a notice of intent (NOI) must be filed with the Delegated Agency (i.e., DNREC) at least five days prior to the start of activities. Additionally, in accordance with the Sediment and Stormwater Management guidelines, post-construction BMPs would be implemented and maintained.

### **2.2.3 Operations**

During construction of a new facility, the existing parking apron would still be utilized for aircraft activities. After completion of the new facility, all Aero Club activities, including the maintenance activities located in Building 918, would be relocated into the new facility. Operations would be similar to those occurring in buildings 1303 and 918. There would be no change in aircraft inventory or operations resulting with this action as the Aero Club is expected to remain at its current membership and level of activity for the foreseeable future.

## **2.3 ALTERNATIVES TO THE PROPOSED ACTION**

### **2.3.1 No Action Alternative**

Although it would not satisfy the purpose and need for the action, a no-action alternative has been carried forward as the baseline against which potential impacts arising from the proposed action alternative can be measured. An analysis of effects from not implementing any action is required under NEPA.

**SECTION 2.0**  
**ALTERNATIVES INCLUDING THE PROPOSED ACTION**

---

Under the no action alternative, the Aero Club activities would be relocated on Dover AFB due to the demolition of Building 1303. After the demolition of Building 1303, it is anticipated that the Aero Club would be temporarily located into modular trailers southeast of the current location or into existing administrative space elsewhere on Dover AFB. The existing level of activity would remain as it is today and one or more modular office trailers would be placed outside of the clear zone in the vicinity of the “Christmas Tree” ramp area.

**2.3.2 Alternatives Eliminated from Detailed Analysis – Renovation of Building 1315**

Under this Alternative, Building 1315 would be renovated for Aero Club activities (Figure 2-1). Building 1315 is currently contaminated with asbestos-containing materials (ACM), and the building’s function and size are not well-suited for Aero Club activities. Additionally, Building 1315 is contained within the building setback associated with the Runway 14/32 primary surface. A runway primary surface, similar to a clear zone, limits type of activities and structures near the side of the runway. For reasons similar to those preventing investment in rehabilitating Building 1303, investing additional funds in this building would not be a wise expenditure of non-appropriated monies. The policy of the Air Force is to program funding to remove buildings in a primary surface rather than embark upon extensive renovation projects. Therefore, this alternative has been eliminated from further consideration in this EA.

**2.4 RESOURCES AND/OR ISSUES ELIMINATED FROM DETAILED ANALYSIS IN THIS ENVIRONMENTAL ASSESSMENT**

CEQ regulations (§1501.7) state that the lead agency shall identify and eliminate from detailed study the issues which are not important or which have been covered by prior environmental review, narrowing the discussion of these issues in the document to a brief presentation of why they would not have a dramatic effect on the human environment. In accordance with §1501.7, issues eliminated from detailed study include: geology and soils; land use; infrastructure, including utilities and transportation; and noise.

**2.4.1 Geology and Soils**

Kent County lies within the Coastal Plain Plateau Province, which is lowland that borders the Atlantic Ocean (U.S. Geological Survey [USGS] 1997). The Coastal Plain Plateau Province is generally flat, seaward sloping lowland with some moderately steep local relief (USGS 1997). The Coastal Plain is generally underlain by semiconsolidated to unconsolidated sediments that consist of silt, clay, and sand with some gravel and lignite. Kent County is underlain by the Northern Atlantic Coastal Plain aquifer system, which includes in descending order, a surficial aquifer, the Chesapeake aquifer, the Castle Hayne-Aquia aquifer, the Severn-Magothy aquifer, and the Potomac aquifer (USGS 1997). At and adjacent to the project area the topography is generally nearly level to gently sloping. The project area is southwest of a former landfill, which

was used from the early to late 1960s for the disposal of construction rubble. The depth of fill in this area is unknown. When disposal activities ceased, the site was covered with several feet of soil and seeded with grass. Implementing the proposed action or alternative will not alter the topography of the project area or adjacent area. As such, this resource area has been eliminated from detailed analysis.

#### **2.4.2 Land Use**

Land use describes the activities that take place in a particular area and generally refers to human modification and occupation of land, usually for residential or commercial purposes. It also refers to use of land for preservation or protection of natural resources. The CEQ NEPA regulations recognize the need for rational management of land resources and anticipate specific assessment of the relationship of a changed pattern in land uses when assessing environmental effects. The critical consideration is if implementation of an action is compatible with existing adjacent uses in conformity with current or proposed land use plans or would preclude their implementation by creating an incompatible land use.

The proposed action or alternative would be consistent with present and foreseeable land use patterns at Dover AFB in accordance with its adopted General Plan. It would be an in-kind replacement of the same land use. The proposed Aero Club improvements are customary airfield related activities (aircraft operations offices and aircraft maintenance), requiring access to the flightline. Because the site selection criteria observed the development constraints in the General Plan, potential incompatibilities arising from airfield noise exposure, clear zones, and similar issues are avoided. Therefore, this resource area has been eliminated from detailed analysis in this EA.

#### **2.4.3 Infrastructure, Including Utilities and Transportation**

The proposed action or alternative would not increase the demand for capacity for infrastructure at or adjacent to the project area. The electrical, water, sewerage and telecommunications utility needs would be similar to those required for present Aero Club operations. Additionally, the proposed site is in an area with ready access to existing utility services. As such, this issue area has been eliminated from detailed analysis in this EA.

#### **2.4.4 Noise**

Noise is defined as any sound that is undesirable because it interferes with communication, is intense enough to damage hearing, or is otherwise intrusive. Human response to noise varies according to the characteristics of the noise sources, distance between source and receiver, receiver sensitivity, and time of day.

Implementing the proposed action or alternative would not alter ambient noise levels at or adjacent to the project area. The primary sources of noise at Dover AFB arise from aircraft

**SECTION 2.0**  
**ALTERNATIVES INCLUDING THE PROPOSED ACTION**

---

operations and maintenance activities associated with heavy airlift cargo planes and transient bomber and fighter aircraft. Aero club aircraft (single and twin-engine piston aircraft) are not a significant contributor to the existing noise environment compared to the C-5 aircraft based at Dover AFB and any transient aircraft that visit the base.

The proposed action or alternative does not include alterations to aero club aircraft inventories, hours of operations, or sortie counts. The proposed site for the aero club construction would not be located within a noise environment appreciably different from the existing location, which, combined with the noise attenuation that occurs from standard building construction techniques does not yield a change to the noise environment to the aero club users. Increased noise levels associated with construction activities would be minor, temporary, and would cease once construction of the facility was completed. In light of the foregoing, this issue area has been eliminated from detailed analysis in this EA.

**2.5 COMPARISON OF THE ALTERNATIVES**

Table 2-1 provides a summary comparison of the alternatives as they relate to the purpose and need criteria presented in Section 2.1. This table indicates that only the proposed action would meet the established purpose and need for the proposed action. Table 2-2 provides a summary of the environmental consequences to all resources associated with implementing those alternatives carried forward for detailed analysis. As demonstrated in Table 2-2, none of the alternatives carried forward for detailed analysis should result in significant impacts to the environment based on set significance thresholds.

**Table 2-1      Summary Comparison of Alternatives Considered**

<b>Purpose and Need Criteria</b>	<b>Alternatives</b>		
	<b>Proposed Action</b>	<b>No Action</b>	<b>Alternative Eliminated from Consideration</b>
Find a location with access to the flight line, but outside of the taxiway for the C-5 operations	Yes	No	Yes
Find a location with access to current utilities	Yes	No	Yes
Find a location with space for an approximately 5,900 square foot facility and associated infrastructure for a total footprint of approximately 30,000 square feet	Yes	No	Yes
Avoid sites identified in the General Plan, Composite Constraints deemed unsuitable because of: a) presence of contaminants listed on the DAFB IRP; b) proximity to sensitive wetlands or containing highly erodible soils; or c) sites located within a Clear Zone or noise contour in excess of 75 DNL as shown in the 2000 DAFB AICUZ	Yes	NA	No

NA = not applicable

SECTION 2.0  
 ALTERNATIVES INCLUDING THE PROPOSED ACTION

---

**Table 2-2 Alternatives Comparison Matrix Summary – All Resources**

Environmental Attributes <i>(Threshold Criteria)</i>	Alternatives	
	Proposed Action	No Action
Geology and Soils <i>(change in topographic relief) (soils meet standards with required engineering techniques) (cut-and-fill balanced) (removal of prime farmland soil)</i>	No Yes Yes No	No NA NA No
Land Use <i>(consistent with adjacent land uses [current and planned])</i>	Yes	No
Infrastructure, Including Utilities and Transportation <i>(unacceptable change in level of services/response times) (unacceptable traffic volume for street capacity)</i>	No No	No No
Noise <i>(permanent increase to unacceptable levels)</i>	No	No
Water Resources, Including Surface and Groundwater <i>(within the 100-year floodplain) (jurisdictional waters on site) (depth to groundwater within construction limits)</i>	No No No	NA NA NA
Biological Resources, Including Vegetation, Wildlife, and Protected Species <i>(acres of habitat affected) (number of protected species or habitat present)</i>	0.7 No	0.0 No
Air Quality <i>(increase above de minimis standards)</i>	No	No
Social or Economic Resources, Including Environmental Justice <i>(unacceptable change in personal income or employment) (accessibility to LEP individuals) (number of minority and/or low-income populations affected) (impacts community cohesion)</i>	No Yes 0 No	Yes NA 0 No
Historic or Archeological Resources <i>(number of eligible or potentially eligible sites affected)</i>	0	0
Safety <i>(creates unacceptable safety conditions) (exposure to hazardous materials/wastes/substances) (within the airfield clear zone or accident potential zone)</i>	No No No	No No No
Hazardous Materials and Substances <i>(known hazardous materials/wastes/substances at the location) (within an IRP site)</i>	No No	NA No

## **SECTION 3.0      AFFECTED ENVIRONMENT**

This section of the EA describes the existing environment of the project area.

### **3.1      WATER RESOURCES**

Groundwater resources are vulnerable to contamination and quality degradation. For this reason, the Federal Water Pollution Control Act (FWPCA), as amended by the Clean Water Act (CWA) of 1977, was enacted to protect these valuable, irreplaceable resources. The Water Pollution Prevention and Control Act (33 USC 26), also known as the CWA Amendments, set the national policy objective to “restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.” The FWPCA provides the authority to establish water quality standards, control discharges into surface and subsurface waters (including groundwater), develop waste treatment management plans and practices, and issue permits for discharges (Section 402) and for dredged or fill material (Section 404). A NPDES permit under Section 402 of the CWA is required for discharges into navigable waters; a Section 404 permit is required for dredged or fill material in navigable waters; and a Section 10 permit under the Rivers and Harbors Act of 1899 is required for obstruction or alteration of navigable waters. “Navigable waters” have been very broadly defined in EPA regulations (40 CFR §230) and encompass most bodies of water (including wetlands) and their tributaries. The EPA is charged with the overall responsibility for Section 402 permits; the U.S. Army Corps of Engineers (USACE) has responsibility for Section 404 permits; and the U.S. Coast Guard has responsibility for Section 10 permits. Both the EPA and DNREC oversee water quality regulations (Section 401) for both surface and groundwater within the state; the EPA issues NPDES permits (see Section 2.2.2., Permits and Notifications).

Jurisdictional waters, including surface water resources (rivers, streams, tributaries, lakes, wetlands, on-channel ponds, etc.) as defined in 33 CFR §328.3, are regulated under Sections 401 and 404 of the CWA and Section 10 of the Rivers and Harbors Act. Man-made features not directly associated with a natural drainage, such as upland stock ponds and irrigation canals, are generally not considered jurisdictional waters.

Wetlands are those areas inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for saturated soil (Environmental Laboratory 1987). Waters of the United States (Section 328.3[2] of the CWA) are those waters used in interstate or foreign commerce, subject to ebb and flow of tide, and all interstate waters including interstate wetlands. Waters of the United States are further defined as all other waters such as intrastate lakes, rivers, streams, mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, natural ponds, impoundments of waters, tributaries of waters, and territorial seas.

**SECTION 3.0**  
**AFFECTED ENVIRONMENT**

---

A 100-year flood (intermediate regional flood) is defined as a flood level that occurs with an average frequency of once in 100 years at a designated location, although it may occur any year, even 2 years in a row. The Federal Emergency Management Agency (FEMA) is responsible for implementation and management of the National Flood Insurance Program under 44 CFR; however, local government (e.g., the City of Dover) is responsible for administration of the floodplain within its respective borders. FEMA regulates the impact of vertical development on surface water elevation and flood limits within the floodplain.

### **3.1.1 Surface Waters**

The proposed project is not located within a wetland or 100-year floodplain and there are no surface waters located within the proposed action area. The St. Jones River flows along the southern boundary of the base and is located approximately 1 mile southwest of the proposed action area. The Little River flows through the northern portion of the base. A drainage system consisting of ditches and below-ground pipes diverts surface-water runoff from the base into these two rivers. Several drainage ditches located west of the proposed action area divert water into the St. Jones River.

### **3.1.2 Groundwater**

Shallow groundwater is present at Dover AFB and is found within four aquifers – the Columbia, Frederica, Cheswold, and Piney Point. The unconfined Columbia Aquifer is the uppermost aquifer beneath Dover AFB and holds the water table that ranges from 70 feet below ground surface (bgs) to within a few feet near the St. Jones River. In general, groundwater at the base flows southwest toward the St. Jones River and its tributaries and to the on-base drainage channels.

## **3.2 BIOLOGICAL RESOURCES**

Biological resources play an integral role in the natural environment. The CEQ (1993) recognizes that biological resources, and from them biodiversity, are "...not a series of unconnected elements, and that the richness of the mix of elements and the connections between those elements are what sustains the system as a whole." The Endangered Species Act of 1973 (Public Law 93-205), as amended, was enacted to provide a program of preservation for endangered and/or threatened species and to provide protection for ecosystems upon which these species depend for their survival. The U.S. Fish and Wildlife Service (USFWS) is responsible for implementing the Endangered Species Act within the United States and its territories. Additionally, the National Marine Fisheries Service is responsible for implementing protection of marine protected species within the U.S. territorial waters.

### **3.2.1 Vegetation**

Two physiographic provinces are located in Delaware, ranging from the outer Coastal Plain to the Piedmont. Scattered wooded areas of oak and hickory were present at Dover AFB before construction began in 1941. Currently, vegetation within the proposed action area consists of maintained and regularly mowed grasses.

### **3.2.2 Wildlife**

Given the degree of urbanization surrounding the proposed action area, wildlife within the proposed action area would be limited to wildlife such as passerine birds and small mammals that can tolerate urban habitat. This would include various songbirds, as well as small mammalian species, such as raccoons, opossums, rodents, and rabbits.

### **3.2.3 Protected Species**

The State of Delaware lists two amphibians, 24 birds, one fish, eight insects, one mammal, six mollusks, and six reptiles as endangered. According to the 1993 Biological/Ecological Inventory, there are no known occurrences of Federally listed threatened/endangered animals or plants at Dover AFB. There is one plant of State Concern, the yellow passionflower (*Passiflora lutea*) at Dover AFB, and one state endangered bird, the upland sandpiper (*Bartramia longicauda*) that occurs near Dover AFB. The yellow passionflower occurs in wooded habitat and would most likely not occur within the disturbed habitat of the proposed action area. The upland sandpiper has been seen on Dover AFB east and south of the proposed area. It prefers large areas of open grassland; therefore, it would most likely not occur in the small area of disturbed habitat at the proposed action area..

## **3.3 AIR QUALITY**

The Clean Air Act (CAA) (42 USC 7401-7671q), as amended, gives the EPA the responsibility to establish the primary and secondary National Ambient Air Quality Standards (NAAQS) (40 CFR §50) that set safe concentration levels for six criteria pollutants: particulate matter measuring less than 10 microns in diameter (PM<sub>10</sub>), sulfur dioxide (SO<sub>2</sub>), carbon monoxide (CO), nitrous oxides (NO<sub>x</sub>), ozone (O<sub>3</sub>), and lead (Pb). Short-term standards (1-, 8-, and 24-hour periods) have been established for pollutants contributing to acute health effects, while long-term standards (annual averages) have been established for pollutants contributing to chronic health effects. Each state has the authority to adopt standards stricter than those established under the Federal program; however, Delaware accepts the Federal standards (Table 3-1).

Primary NAAQS are established to protect public health, and secondary standards provide protection for the public welfare, which includes wildlife, climate, transportation, and economic values. Additionally, the EPA also has responsibility for ensuring that air quality standards are met to control pollutant emissions from mobile (vehicles) and stationary (factories) sources.

**SECTION 3.0**  
**AFFECTED ENVIRONMENT**

---

Areas that violate air quality standards are designated as “nonattainment” areas, and areas that comply with air quality standards are designated “attainment” areas for the relevant pollutants.

**Table 3-1 National Ambient Air Quality Standards**

<b>Air Pollutant</b>	<b>Averaging Time</b>	<b>NAAQS</b>	
		<b>Primary<sup>/1</sup></b>	<b>Secondary<sup>/2</sup></b>
CO	1-hour	35 ppm	35 ppm
	8-hour	9 ppm	9 ppm
NO <sub>x</sub>	Annual	0.053 ppm	0.053 ppm
SO <sub>2</sub>	3-hour	-	0.50 ppm
	24-hour	0.14 ppm	-
	Annual	0.03 ppm	-
PM <sub>10</sub>	24-hour	150 µg/m <sup>3</sup>	150 µg/m <sup>3</sup>
	Annual	50 µg/m <sup>3</sup>	50 µg/m <sup>3</sup>
O <sub>3</sub>	1-hour <sup>/3</sup>	0.12 ppm	0.12 ppm
	8-hour	0.08 ppm	0.08 ppm
Pb	Quarterly average	1.5 µg/m <sup>3</sup>	1.5 µg/m <sup>3</sup>

<sup>/1</sup> Primary standards set limits to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly.

<sup>/2</sup> Secondary standards set limits to protect public welfare, including protection against decreased visibility, and damage to animals, crops, vegetation, and buildings.

<sup>/3</sup> The ozone 1-hour standard applies only to designated nonattainment areas.

ppm = parts per million

µg/m<sup>3</sup> = micrograms per cubic meter

Source: EPA 2004a

In areas currently designated as being in nonattainment, Federal agencies are required to determine whether their proposed action would increase emissions of criteria pollutants above threshold levels (40 CFR §93.150–93.160). To ensure that Federal actions do not interfere with a state’s timely attainment of the NAAQS, the CAA requires that Federal agencies demonstrate that their actions conducted in nonattainment and maintenance areas conform to the purposes of the State Implementation Plan (SIP). According to the implementing regulation, promulgated by the EPA, proposed Federal actions must be specifically identified in the SIP, must have minor emissions below threshold levels identified in the regulations, or must offset any resulting increases in emissions.

The region of influence (ROI) for air quality impacts for the proposed activity would be the area immediately surrounding Dover AFB. For analysis purposes, the emissions produced for the proposed action are compared to local data and implementation plans in Kent County, Delaware.

Under the CAA, Kent County is classified as a severe nonattainment area for ground-level O<sub>3</sub> with respect to the 1-hour NAAQS and moderate nonattainment with respect to the 8-hour

NAAQS (EPA 2004b). The air quality status in Delaware is monitored by DNREC, Division of Air and Waste Management, Air Quality Management team. One of the key objectives of the Air Quality Management team is to attain and maintain the ozone air quality standard (DNREC 2001).

The Air Quality Management team operates nine monitoring stations throughout the state (one monitoring station is located in Kent County). The monitoring stations data are updated daily and posted on the DNREC website to report the Air Quality Index (AQI) to local residents. The AQI is an approximate indicator of overall air quality developed by the EPA that can be easily interpreted by the public. The AQI categorizes the air quality as good, moderate, unhealthy for sensitive groups, unhealthy, very unhealthy, and hazardous. The recent AQI reported for the Kent County monitor was good (DNREC 2004). Since 1990, there have been no more than 3 days in each year in Kent County that exceeded the 1-hour NAAQS (DNREC 2002).

### **3.4 SOCIOECONOMIC RESOURCES**

Socioeconomic analyses generally include detailed investigations of the prevailing population, income, employment, and housing conditions of a community or area of interest. The socioeconomic conditions of a region of influence could be affected by changes in the rate of population growth, changes in the demographic characteristics of a ROI, or changes in employment within the ROI caused by the implementation of the proposed action. In addition to these characteristics, populations of special concern, as addressed by Executive Order (EO) 12898 (Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, February 1994), are identified and analyzed for environmental justice impacts.

EO 12898 requires a Federal agency to “make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high human health or environmental effects of its programs, policies, and activities on minority populations and low income populations.” A memorandum from the President concerning EO 12898 stated that Federal agencies should collect and analyze information concerning a project’s effects on minorities or low-income groups, when required by NEPA. If such investigations find that minority or low-income groups experience a disproportionate adverse effect, then avoidance or mitigation measures are to be taken.

According to the CEQ (1997), a minority population can be described as being composed of the following population groups: American Indian or Alaskan Native, Asian or Pacific Islander, Black, not of Hispanic origin, or Hispanic, and exceeding 50 percent of the population in an area or the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population. Race and ethnicity are two separate

**SECTION 3.0**  
**AFFECTED ENVIRONMENT**

---

categories of minority populations. A minority population can be defined by race, by ethnicity, or by a combination of the two distinct classifications.

Race as defined by the U.S. Census Bureau (2001a) includes:

- White – A person having origins in any of the original peoples of Europe, the Middle East, or North Africa;
- Black or African American – A person having origins in any of the Black racial groups of Africa;
- American Indian or Alaska Native – A person having origins in any of the original peoples of North and South America (including Central America) and who maintain tribal affiliation or community attachment;
- Asian – A person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent including, for example, Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, or the Philippine Islands; and
- Native Hawaiian and Other Pacific Islanders – A person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands.

The U.S. Census Bureau (USCB) defines ethnicity as either being of Hispanic origin or not being of Hispanic origin. Hispanic origin is defined as “a person of Cuban, Mexican, Puerto Rican, South or Central America, or other Spanish culture or origin regardless of race” (USCB 2001).

Each year the USCB defines the national poverty thresholds, which are measured in terms of household income dependent upon the number of persons within the household. Individuals falling below the poverty threshold (\$17,603 for a household of four in 2000) are considered low-income individuals. USCB census tracts where at least 20 percent of the residents are considered poor are known as *poverty areas* (USCB 1995). When the percentage of residents considered poor is greater than 40 percent, the census tract becomes an *extreme poverty area*.

### **3.4.1 Demographics**

The population within Kent County, Delaware increased approximately 14 percent between 1990 and 2000 (Table 3-2) (USCB 1993, 2002). The population of the census tract containing Dover AFB declined approximately 30 percent during this period, which followed the trend observed in the immediately adjacent census tracts and the immediately adjacent block groups (see Table 3-2).

**Table 3-2 Population Change within the ROI**

Census	Kent County	Census Tract 411 <sup>/1</sup>	Combined Census Tracts <sup>/2</sup>	Combined Block Groups <sup>/3</sup>
1990	110,993	5,488	29,431	18,193
2000	126,697	3,849	19,174	13,546
Percent Change	14.1	(29.9)	(34.9)	(25.5)

<sup>/1</sup> 200 Census Tract 411 includes all of Dover AFB, excluding off main base family housing

<sup>/2</sup> 2000 Census Tracts include 404, 410, 411, 412, and 422.01. 1990 Census Tracts include 404, 410, 411, 412, 417, and 422, which are approximately the same area the 2000 Census Tracts.

<sup>/3</sup> 2000 Block Groups include 1, Tract 404; 2, Tract 410; 9, Tract 411; 1, Tract 412; and 1, Tract 422.01. 1990 Block Groups include 1, Tract 404; 1-2, Tract 410; 9, Tract 411; 1, Tract 412; 4, Tract 417; and 1, Tract 422, which are approximately the same area as the 2000 Block Groups.

Source: USCB 1993, 2002

The majority of the population in all areas within the ROI was White, non-Hispanic (USCB 2002) (Table 3-3). The combined census tracts had the largest percent population of minorities, with Black or African-American, alone, the largest percentage of this population (25.0 percent of the total population). The minority population within Kent County accounted for 27.8 percent of the population (standard error +/- 0.63 percentage points), which falls below the threshold for a concentrated minority population. Census Tract 411, containing Dover AFB, had a total minority population of 31.1 percent of the total population (standard error +/- 8.88 percentage points),

**Table 3-3 2000 Demographic Profile of the ROI**

Race	Kent County (#/%)	Census Tract 411 <sup>/1</sup> (#/%)	Combined Census Tracts <sup>/2</sup> (#/%)	Combined Block Groups <sup>/3</sup> (#/%)
White, alone	91,515/72.2	2,653/68.9	12,166/63.5	8,938/66.0
Black or African-American, alone	25,242/19.9	652/16.9	4,787/25.0	2,997/22.1
American Indian or Alaska Native, alone	998/0.8	62/1.6	129/0.7	101/0.8
Asian, alone	2,035/1.6	57/1.5	347/1.8	270/2.0
Native Hawaiian or Other Pacific Islander, alone	10/0.0	0/0.0	0/0.0	0/0.0
All Other Races or Combination of Races	2,619/2.1	161/4.2	802/4.2	559/4.1
Hispanic	4,278/3.4	264/6.9	943/4.9	681/5.0
Total Minority	35,182/27.8	1,196/31.1	7,008/36.5	4,608/34.0

<sup>/1</sup> 200 Census Tract 411 includes all of Dover AFB, excluding off main base family housing

<sup>/2</sup> 2000 Census Tracts include 404, 410, 411, 412, and 422.01

<sup>/3</sup> 2000 Block Groups include 1, Tract 404; 2, Tract 410; 9, Tract 411; 1, Tract 412; and 1, Tract 422.01

Source: USCB 2002

**SECTION 3.0**  
**AFFECTED ENVIRONMENT**

---

though this level falls below the threshold for a concentrated minority population, it could be considered a disproportionate minority population compared to Kent County. Likewise, the combined census tracts (36.5 percent minority) and the combined block groups (34.0 percent minority) could also be considered as having a disproportionate minority population compared to Kent County.

### **3.4.2 Limited English Proficiency**

In August 2000, EO 13166 (Improving Access to Services for Persons with Limited English Proficiency [LEP]) was signed. This EO requires that Federal agencies improve the accessibility of Federal programs to eligible LEP individuals. Additionally, this EO also requires Federal agencies to ensure that stakeholders, such as LEP individuals and their representative organizations, recipients, and other appropriate individuals or entities, have an adequate opportunity to provide input. These consultations will assist the agencies in developing an approach to ensure meaningful access by LEP individuals that is practical and effective, is fiscally responsible, is responsive to the particular circumstances of each agency, and can be readily implemented.

In 2000, approximately 725 households in Kent County were considered linguistically isolated<sup>1</sup> (USCB 2002). In Census Tract 411, containing Dover AFB, no households were considered linguistically isolated. In the combined census tracts 98 households were considered linguistically isolated and in the combined block groups 50 households were considered linguistically isolated (USCB 2002).

The average household size in Kent County was 2.68, in Census Tract 411 it was 4.39, in the combined census tracts it was 2.82, and in the combined block groups it was 2.85. Extrapolating average household size and the number of linguistically isolated households gives an estimated number of linguistically isolated individuals in all areas. In Kent County, 1,943 persons, 276 persons in the combined census tracts, and 143 persons in the combined block groups could be considered linguistically isolated.

### **3.4.3 Employment and Income**

The median household income in both Kent County and Census Tract 411 increased between 1990 and 2000 (USCB 1993, 2002). The median household income within Kent County nominally increased by \$11,453 to \$40,950, a 38.8 percent increase. In Census Tract 411 the median household income nominally increased by \$10,387 to \$34,318, a 43.4 percent increase. Earnings data indicated that personal income within Kent County increased by 65.2 percent between 1990 and 2000 to \$3.0 billion (Bureau of Economic Analysis [BEA] 2004a). Nonfarm

---

<sup>1</sup> A linguistically isolated household is one in which no member 14 years old and over (1) speaks only English or (2) speaks a non-English language and speaks English “very well.” In other words, all members 14 years old and over have at least some difficulty with English (USCB 2002).

earnings increased 60.4 percent during this period in Kent County to approximately \$2.3 billion (BEA 2004a). Farm earnings increased 37.9 percent during the period to \$32.7 million (BEA 2004a). The industries with the greatest increase in earnings between 1990 and 2000 in Kent County were Finance, Insurance, and Real Estate (FIRE), Services, and Transportation and Public Utilities (BEA 2004a).

Total full-time and part-time employment increased approximately 23.8 percent in Kent County between 1990 and 2000 (BEA 2004b). Substantial increases in employment were identified in FIRE and Services during this period (BEA 2004b). Decreases in employment opportunities were identified in Manufacturing, Federal, Civilian, and Military between 1990 and 2000 (BEA 2004b).

The poverty rate decreased approximately 0.6 percent in Kent County, to 10.7 percent between 1990 and 2000 (USCB 1993, 2002). The poverty rate also decreased in Census Tract 411 to 4.2 percent, a decline of 1.9 percent. However, the poverty rate increased approximately 0.8 percent within the combined census tracts and 0.7 percent in the combined block groups during this period, to 12.4 percent and 10.9 percent, respectively (USCB 1993, 2002). None of these areas would be considered concentrated poverty areas; however, the combined census tracts could be considered disproportionately low-income compared to Kent County. Table 3-4 lists the number of persons within each geographic area under the poverty threshold and the poverty rate.

**Table 3-4 Poverty Rate Comparisons**

Census	Kent County (#/%)	Census Tract 411 <sup>/1</sup> (#/%)	Combined Census Tracts <sup>/2</sup> (#/%)	Combined Block Groups <sup>/3</sup> (#/%)
1990	12,071/11.3	265/6.1	3,256/11.6	1,709/10.2
2000	13,083/10.7	146/4.2	2,317/12.4	1,425/10.9

<sup>/1</sup> 2000 Census Tract 411 includes all of Dover AFB, excluding off main base family housing

<sup>/2</sup> 2000 Census Tracts include 404, 410, 411, 412, and 422.01. 1990 Census Tracts include 404, 410, 411, 412, 417, and 422, which are approximately the same area the 2000 Census Tracts.

<sup>/3</sup> 2000 Block Groups include 1, Tract 404; 2, Tract 410; 9, Tract 411; 1, Tract 412; and 1, Tract 422.01. 1990 Block Groups include 1, Tract 404; 1-2, Tract 410; 9, Tract 411; 1, Tract 412; 4, Tract 417; and 1, Tract 422, which are approximately the same area as the 2000 Block Groups.

Source: USCB 1993, 2002

### **3.5 HISTORIC OR ARCHEOLOGICAL RESOURCES**

The National Historic Preservation Act (NHPA) of 1966 (16 USC 470 et seq., as amended), the Archeological and Historic Preservation Act (AHPA) of 1974 (16 USC 469a et seq.), and the Archeological Resources Protection Act (ARPA) of 1979 (16 USC 470aa-470ll) are designed to ensure adequate consideration of the values of historic properties in carrying out Federal activities and to attempt to identify and mitigate impacts to significant historic properties. The NHPA is the principal authority used to protect historic properties; Federal agencies must determine the effect of their actions on cultural resources and take certain steps to ensure that these resources are located, identified, evaluated, and protected. The 36 CFR §800 defines the responsibilities of the state, the Federal government, and the Advisory Council on Historic Preservation (ACHP) in protecting historic properties identified in a project area. The 36 CFR §60 establishes the NRHP and defines the criteria for evaluating eligibility of cultural resources for listing on the NRHP. The ARPA of 1979 protects archeological resources on Federal lands. If archeological resources are discovered that may be disturbed during site activities, the act requires permits for excavating and removing any archeological resources. In this EA, historic properties refer to properties eligible for inclusion in the NRHP.

Cultural resources are nonrenewable resources. Their value may be diminished by physical disturbances. These resources include buildings, structures, objects, landscapes, and archeological sites, as well as places of importance to a culture or community for reasons of history, religion, or science. The archeological sites may include both prehistoric and historic sites, e.g., campsites, resource use or acquisition areas, house sites, and trash deposits that may exist.

#### **3.5.1 Historic Resources**

The real property inventory for Dover AFB lists 1,126 facilities within the boundaries of the base. Eight facilities were constructed during World War II; no military facilities pre-date that period. The Cold War inventory identified 23 post-World War II facilities as potentially eligible for the National Register and requiring evaluation, and recommended two as potentially eligible and 10 as requiring re-evaluation as they reached 50 years of age.

Building 1303 and its associated alert apron are currently the only eligible historic properties within or adjacent to the proposed Area of Potential Effects. A description of this property and a discussion of its significance are provided below.

Building 1303 is a 70-man, Strategic Air Command (SAC) readiness crew facility constructed by using a standardized design. Built of reinforced concrete and concrete block, the facility is two stories, with one story below ground; there are no windows. The building rests on a reinforced concrete slab foundation and supports a steel roof, insulated with two inches of gypsum and 5-ply

built-up sheathing. There are six tunnel entrances to the underground story and seven tunnel entrances to the above-ground story; each tunnel entrance is covered with corrugated metal and contains two sets of double hung metal doors containing glass panels. The upper level interior is configured as control and security rooms, offices, dining quarters, and lounges. The lower level is configured as two and three-man bedrooms, latrines, and mechanical rooms. The exterior of Building 1303 is essentially unmodified; the interior has been modernized, but the configuration remains near the original design (HQ AMC 1996).

The associated alert apron is a seven-stub herringbone-shaped concrete pad (frequently referred to as a Christmas tree). The design of this apron allowed for fast takeoff by angling directly onto the taxiway and runway. The Christmas Tree apron pattern is one of the primary structures symbolic of the defensive efforts of the United States during the Cold War era conflict. Building 1303 has been recommended as potentially eligible for inclusion in the NRHP under Criterion C and Criteria Consideration G, as a highly intact example of one critical component in the strategic military alert infrastructure of the 1958-1962 period. Within the AMC inventory, no other SAC readiness crew facility (molehole) and alert apron retain the level of historic integrity found at Dover AFB. The facility retains an exceptionally high degree of exterior integrity, with its interior spatial arrangement still evocative of the original Cold War alert function. Detailed information regarding SAC readiness crew facilities and alert aprons and their significance during the Cold War can be found in *Dover Air Force Base, Dover, Delaware, Inventory of Cold War Properties* (HQ AMC 1996).

### 3.5.2 Archeological Resources

Dover AFB has completed identification and evaluation of archeological properties under Section 110 of the NHPA. Eleven archeological sites have been recorded on the base. Five of these are potentially eligible for the NRHP, the eligibility of one is considered unknown, and the remaining five are not eligible for the NRHP. Table 3-5 lists potentially NRHP eligible sites on Dover AFB.

**Table 3-5      NRHP Status of Archeological Sites on Dover AFB**

<b>Site</b>	<b>Historic Map Location</b>	<b>Condition</b>	<b>Recommendation</b>	<b>DESHPO Concurrence</b>
7K-D-2	7	Stable	Potentially Eligible	Yes
7K-D-5	NA	Stable	Eligibility Unknown	Yes
7K-D-26	27, 61, 62	Eroding	Potentially Eligible	Yes
7K-D-125	NA	Stable	Potentially Eligible	Yes
7K-D-126	49, 50	Stable	Potentially Eligible	Yes
7K-D-129	John Wesley ME Cemetery	Rodent Damage	Potentially Eligible	Yes
7K-D-136	NA	Stable	Not Eligible	Yes
7K-D-132	12 and 29	Stable	Not Eligible	Yes
7K-D-133	26 and 51	Stable	Not Eligible	Yes
7K-D-134	40 and 53	Stable	Not Eligible	Yes
7K-D-135	NA	Stable	Not Eligible	Yes

Of these sites, only site 7K-D-134, a historic period site, was encountered along the margins of the Christmas Tree apron area. This site consists of a surface scatter of nineteenth and twentieth-century artifacts. The site covers an area of 6,650 square meters. This site may be associated with buildings that appear on the 1899 and 1936 USGS maps and on the 1937 aerial photograph of the base area. Little nineteenth century or earlier material was found (1 pearlware body sherd, 3 pieces of white ware, and 1 piece of yellow ware). Artifacts were recovered from a layer of twentieth century fill, and from a possible twentieth century plow zone (buried in places by the fill). No evidence of subsurface cultural features was encountered. The artifact density of the site is low. Many of the artifacts are very small in size, consistent with being found in contexts that have been repeatedly disturbed. Because of the low density and poor integrity of the site, its research potential is very low. Site 7K-D-134 is recommended not eligible for the NRHP.

### **3.6      SAFETY**

Air Force Instruction (AFI) 91-301, *Air Force Occupational and Environmental Safety, Fire Protection, and Health* (AFOSH) Program, implements Air Force Policy Directive (AFPD) 91-3, *Occupational Safety and Health*, by outlining the AFOSH program. The AFOSH program's purpose is to minimize loss of Air Force resources and to protect Air Force personnel from occupational deaths, injuries, or illnesses by managing risks. In conjunction with the Air Force Mishap Prevention Program (AFI 91-202), these standards ensure all Air Force workplaces meet Federal safety and health requirements. This instruction applies to all Air Force activities.

### **3.7 HAZARDOUS MATERIALS AND SUBSTANCES**

Concerns over the improper handling and disposal of solid and hazardous wastes that posed a continuing threat to the environment and a danger to human health led to the enactment of the Resource Conservation and Recovery Act (RCRA) of 1976. The RCRA replaced the Solid Waste Disposal Act and authorized the EPA to provide for cradle-to-grave management of hazardous waste and set a framework for the management of nonhazardous municipal solid waste.

Under RCRA, a waste is defined as hazardous if it is ignitable, corrosive, reactive, toxic, or listed by the EPA as being hazardous. The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 and the Superfund Amendments and Reauthorization Act (SARA) of 1986 authorize the EPA to respond to spills and other releases of hazardous substances to the environment. It also authorizes the National Oil and Hazardous Substances Pollution Contingency Plan. Title III of SARA authorizes the Emergency Planning and Community Right-to-Know Act (EPCRA), which requires facility operators with hazardous substances to prepare comprehensive emergency plans and to report accidental releases. EO 12856 (Federal Compliance with Right-to-Know Laws and Pollution Prevention Requirements, August 1993) requires Federal agencies to comply with the provisions of EPCRA.

The base contains 23 areas on site that were used for disposing of industrial waste. An estimated 23,000 cubic feet of waste were disposed of from 1951 to 1970. The base's operations generated numerous wastes, some in drums, including paints, solvents, waste fuels, and oil. These wastes were disposed of in various on-base locations including 12 landfills and 3 fire training areas.

Shallow on-site groundwater in the area is contaminated with heavy metals including arsenic and cadmium and volatile organic compounds (VOC) from former waste disposal practices and site operations. A variety of VOCs have been detected in both on- and off-site groundwater including trichloroethylene (TCE), tetrachloroethylene (PCE) and carbon tetrachloride. VOCs also have been detected in the sediments. VOCs and heavy metals including mercury, chromium, and cadmium have been detected in on-site stream waters.

A solvent is a liquid that is used to dissolve other substances. Solvents that contain halogens (chlorine, fluorine, bromine, and iodine) are known as halogenated solvents, of which chlorinated solvents are the most common. The four most common chemicals used in making chlorinated solvents are methylene chloride, trichloroethane, trichloroethylene, and tetrachloroethylene. Chlorinated solvents, commonly used in manufacturing, are toxic to humans and are often persistent in soil and water. Potential health threats include exposure and ingestion to contaminated ground water used for potable purposes. Direct contact with contaminated soil by workers and potential residents may also be a concern.

Dover AFB evaluated environmental conditions through an August 1997 base-wide remedial investigation (RI) at 59 IRP sites identified as having hazardous or potentially having hazardous

**SECTION 3.0**  
**AFFECTED ENVIRONMENT**

---

contamination. One of these sites, Landfill 19 is located near the proposed action at the site of the present archery range and family camp. Part of a four acre site, it was used from the early to late 1960s for the disposal of construction rubble. The depth of the fill is unknown. When disposal activities ceased, the site was covered with several feet of soil and seeded with grass. Subsequently, the site was converted to its present recreational use (Benner 2004). Other IRP sites within 2,000 feet of the proposed action include the Hazardous Waste Storage Building 1305/6, the former South Tank Farm, and two other landfills. None of these sites are likely to be affected by the proposed action. See Figure 3-1 for a depiction of nearby IRP sites.

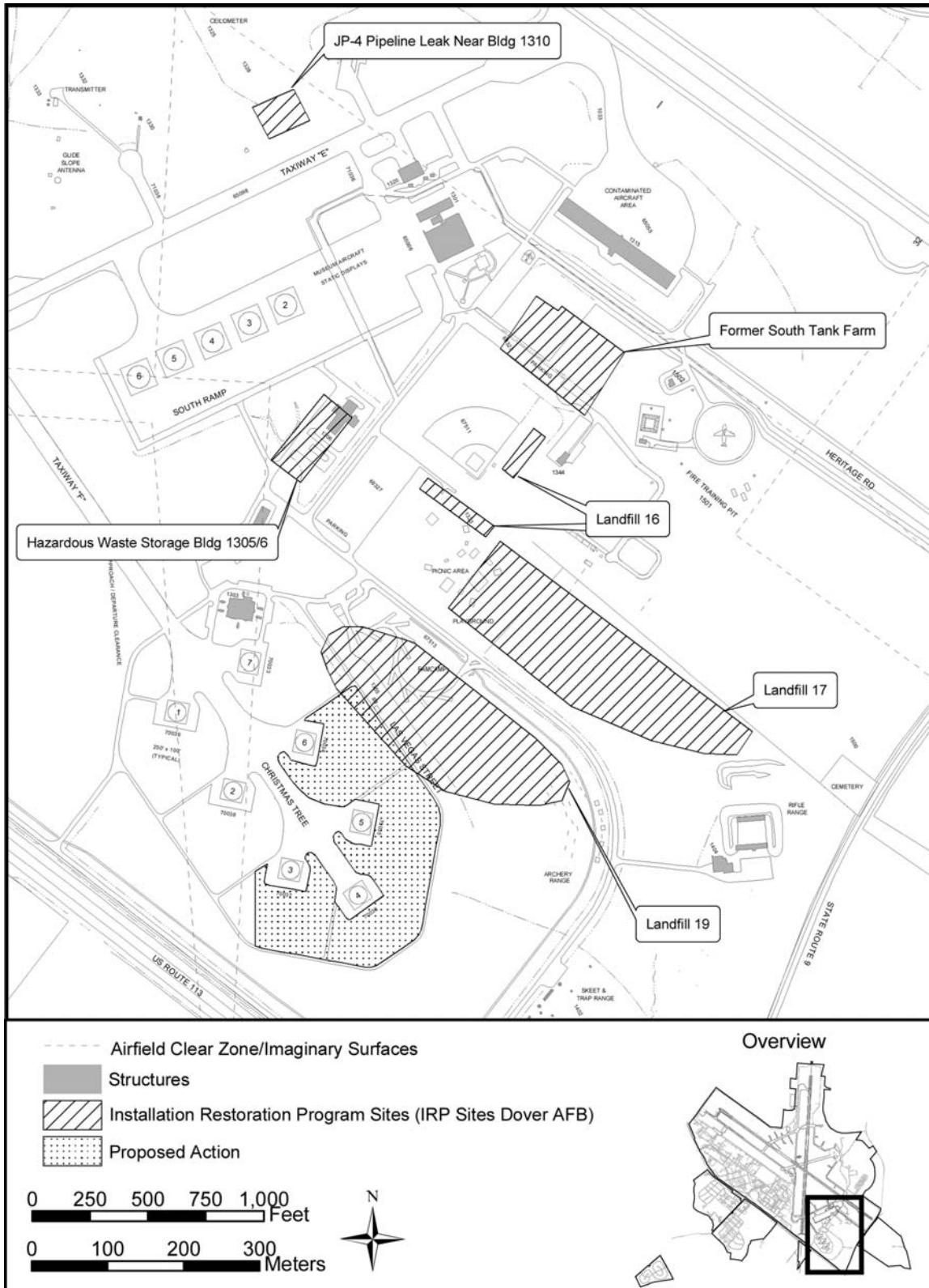


Figure 3-1. Nearby IRP Sites

**SECTION 3.0**  
**AFFECTED ENVIRONMENT**

---

*This page intentionally left blank*

## SECTION 4.0 ENVIRONMENTAL CONSEQUENCES

This section of the EA forms the basis for the comparison of the alternatives identified in Section 2.3. The discussion presented includes the potential environmental impacts from the alternatives implementing the proposed action. Table 4-1 provides a summary of the environmental consequences associated with implementing those alternatives carried forward for detailed analysis.

**Table 4-1 Alternatives Comparison Matrix Summary**

Environmental Attributes <i>(Threshold Criteria)</i>	Alternatives	
	Proposed Action	No Action
Water Resources, Including Surface and Groundwater <i>(within the 100-year floodplain)</i> <i>(jurisdictional waters on site)</i> <i>(depth to groundwater within construction limits)</i>	No No No	NA NA NA
Biological Resources, Including Vegetation, Wildlife, and Protected Species <i>(acres of habitat affected)</i> <i>(number of protected species or habitat present)</i>	0.7 No	0.0 No
Air Quality <i>(increase above de minimis standards)</i>	No	No
Social or Economic Resources, Including Environmental Justice <i>(unacceptable change in personal income or employment)</i> <i>(accessibility to LEP individuals)</i> <i>(number of minority and/or low-income populations affected)</i> <i>(impacts community cohesion)</i>	No Yes 0 No	Yes NA 0 No
Historic or Archeological Resources <i>(number of eligible or potentially eligible sites affected)</i>	0	0
Safety <i>(creates unacceptable safety conditions)</i> <i>(exposure to hazardous materials/wastes/substances)</i> <i>(within the airfield clear zone or accident potential zone)</i>	No No No	No No No
Hazardous Materials and Substances <i>(known hazardous materials/wastes/substances at the location)</i> <i>(within an ERP site)</i>	No No	NA No

## 4.1 WATER RESOURCES

### 4.1.1 No Action Alternative

Implementing the no action alternative would result in no construction activities; as a result, there would be no potential to impact surface waters (including wetlands/waters of the United States) in the area.

### 4.1.2 Proposed Action

Implementing the proposed action would not result in adverse impacts to water resources within or adjacent to the project area. As mentioned in Section 2.2, a sediment and erosion control plan will be developed and implemented during construction and this would minimize any potential impacts to nearby surface water features (e.g., erosion, siltation, etc.) that could result from construction and demolition activities. Additionally, the groundwater in the unconfined aquifer (the Columbia Aquifer described in Section 3.1.2), at Dover AFB, is contaminated with chlorinated solvents. Implementing the proposed action would not impact the groundwater table since construction activities would not reach to the depth of the top of this aquifer.

### 4.1.3 Cumulative Impacts

Implementing the proposed action or no action alternative would not result in adverse cumulative impacts to water resources. Dover AFB is planning to reduce the amount of impermeable square footage by approximately 70,000 square feet by FY 10. This reduction in impermeable surfaces as well as strict adherence to the sediment and erosion control procedures would reduce the amount of sedimentation flowing into surface waters through stormwater runoff.

## 4.2 BIOLOGICAL RESOURCES

### 4.2.1 No Action Alternative

Selecting the no action alternative would result in no ground disturbance and therefore no alteration/disturbance of existing vegetative cover. As a result, vegetation and wildlife (including threatened and endangered species and unique habitats) in the area would not be affected.

### 4.2.2 Proposed Action

Implementing the proposed action would not result in adverse impacts to biological resources. Due to the nature of the project area (i.e., previously disturbed and regularly mowed) there would be no substantial impacts to vegetation. Implementing the proposed action would not impact rare, endangered, or threatened species since there is no habitat for any of the listed species within or adjacent to the project area.

#### **4.2.3 Cumulative Impacts**

Implementing the proposed action or no action alternative would not result in adverse cumulative impacts to biologic resources. The biological resources at and adjacent to the project area are constrained by airfield safety requirements, as such, the vegetation community is highly maintained grassland. The proposed action would reduce the amount of this maintained grassland by approximately 30,000 square feet, which is a relatively small amount of open space on the installation.

### **4.3 AIR QUALITY**

#### **4.3.1 No Action Alternative**

Under the no action alternative, Aero Club activities would continue to occur at the same level as they presently occur on Dover AFB. No construction activities would occur. Therefore, no impact to Air Quality would occur if this alternative were selected.

#### **4.3.2 Proposed Action**

Implementing the proposed action would have minor, temporary impacts on local air quality during construction of the new facility. The proposed construction projects would occur in two phases: site grading and building. Ordinary activities for these phases include site preparation, earthmoving, general land clearing, cut and fill operations, trenching, soil compaction, grading, and adding improvements such as structures and facilities. Emissions generated from these activities include: combustion emissions (reactive organic gases [ROG], NO<sub>x</sub>, CO, SO<sub>2</sub>, PM<sub>10</sub>) from mobile heavy-duty diesel- and gasoline-powered equipment, portable auxiliary equipment, and worker commute trips; and fugitive dust (PM<sub>10</sub>) from soil disturbance. O<sub>3</sub> is formed when ROG combine with NO<sub>x</sub>, therefore, *de minimis* levels are established for ROG and NO<sub>x</sub> for those areas with nonattainment status for O<sub>3</sub>.

The total construction area would be less than one acre and activities would last for up to 18 months beginning in 2005. Emissions estimates for the proposed action were calculated using the URBEMIS2002 model and methods outlined in the Guide to Air Quality Assessment (El Dorado County 2002, Jones and Stokes 2003). The ROG and NO<sub>x</sub> estimated emissions are not expected to exceed *de minimis* levels established for severe nonattainment areas for O<sub>3</sub> or violate standards from the SIP. Detailed emissions and assumptions are provided in Appendix B. A summary of results are provided in Table 4-2.

**Table 4-2      Estimated Emissions from the Proposed Action**

Activities by Year	ROG (tpy)	NO <sub>x</sub> (tpy)	CO (tpy)	SO <sub>2</sub> (tpy)	PM <sub>10</sub> (tpy)
<b>2005</b>					
<i>Site Grading</i>	0.10	0.80	0.66	0.00	0.06
<i>Building Construction</i>	0.40	3.40	3.10	0.00	0.20
<b>Subtotal 2005</b>	<b>0.50</b>	<b>4.20</b>	<b>3.76</b>	<b>0.00</b>	<b>0.26</b>
<b>2006</b>					
<i>Site Grading</i>	0.00	0.00	0.00	0.00	0.00
<i>Building Construction</i>	0.35	1.98	1.92	0.00	0.06
<b>Subtotal 2006</b>	<b>0.35</b>	<b>1.98</b>	<b>1.92</b>	<b>0.00</b>	<b>0.06</b>
<b>Total Project Emissions</b>	<b>0.85</b>	<b>6.18</b>	<b>5.68</b>	<b>0.00</b>	<b>0.32</b>
<i>de minimis for Severe Nonattainment of O<sub>3</sub></i>	25	25	N/A	N/A	N/A

#### 4.3.3 Cumulative Impacts

Implementing the proposed action or no action alternative would not result in cumulative impacts. Under the no action alternative, the Aero Club members would continue to operate aircraft on base. Under the proposed action, the Aero Club members and their aircraft would stay near the same general location on base and within the same airshed profile. Construction emissions associated with the new Aero Club facility would be minor, temporary and would cease once construction was completed. The net loss of square footage on Dover AFB over the planning horizon would create minor, temporary emissions during demolition and construction activities, but would not change the general emissions for the region.

### 4.4 SOCIAL OR ECONOMIC RESOURCES

#### 4.4.1 No Action Alternative

Selecting the no action alternative would create no adverse impacts to the social or economic resources of the ROI. Under this alternative, the Aero Club would continue to exist on Dover AFB and the affected environment described in Chapter 3 would be unchanged.

#### 4.4.2 Proposed Action

Implementing the proposed action would not result in significant impacts to socioeconomics, including environmental justice. Under this alternative, Dover AFB would construct a 5,825 square foot building for the Aero Club adjacent to one of the parking apron pads along the “Christmas Tree.” All Aero Club activities currently undertaken within Buildings 1303 and 918 and the subsequent temporary facility, would be relocated to this new building. Construction

spending would be short-term, lasting approximately 12 to 18 months. Therefore, short-term increases in spending and economic flowdown would be expected from implementing this alternative; however, it would be minor and temporary compared to regional economic generation. Additionally, since there would be no adverse impacts, there would be no disproportionately adverse impacts to minority and low-income populations; therefore, there would be no environmental justice concerns from implementing this alternative.

#### **4.4.3 Cumulative Impacts**

Implementing the proposed action or no action alternative would not result in cumulative impacts. The proposed action would create a minor, temporary increase in construction spending, as well as all other planned demolition and construction activities within the planning horizon. However, this would not create a significant impact within the regional economy. Under the no action alternative, the Aero Club would continue to operate. In either event, the impacts compared to the regional economic activity level are negligible.

### **4.5 HISTORIC OR ARCHEOLOGICAL RESOURCES**

An impact would be significant to cultural and/or archeological resources if project activities result in:

- the destruction or alteration of all or a contributing part of any NRHP-eligible cultural or historic property without prior consultation with the State Historic Preservation Officer (SHPO);
- the isolation of an eligible cultural resource from its surrounding environment;
- the introduction of visual, audible, or atmospheric elements that are out of character with a NRHP-eligible site or would alter its setting;
- the neglect and subsequent deterioration of a NRHP-eligible site; or
- the disturbance of important sites of religious or cultural significance to Native Americans.

#### **4.5.1 No Action Alternative**

Implementing the no action alternative would result in no construction or demolition activities; as a result, there would be no potential to impact historic properties.

#### **4.5.2 Proposed Action**

Under the proposed action, Dover AFB would construct, equip, and operate a new facility for the Aero Club. This facility would be located on the south end of the installation adjacent to one of the “Christmas Tree” pad sites near the former SAC readiness crew facility (Building 1303), which is scheduled to be demolished due to its location within the Clear Zone (see Figure 2-1).

**SECTION 4.0**  
**ENVIRONMENTAL CONSEQUENCES**

---

Building 1303 currently houses the Dover AFB Aero Club activities. The demolition of Building 1303 was analyzed in an EA dated 21 September 2004 (DAFB 2004a). Due to the age and significance of the building, it is eligible for listing on the NRHP. Since it must be demolished for airfield safety concerns, the adverse effect from its demolition will be mitigated through recordation, public outreach, and monitoring and reporting (DAFB 2004b).

The Christmas Tree apron, although an element of the Cold War era state of readiness for SAC alert crews, is not considered eligible for listing on the NRHP. The proposed construction of the new facility is adjacent to the Christmas Tree apron and the apron will continue to be used for flight-related activities,

No significant archeological properties would be impacted by the proposed action.

#### **4.5.3 Cumulative Impacts**

Implementing the proposed action or no action alternative would not result in cumulative impacts. The proposed action would result in new construction that would be intrusive to the setting of Building 1303 and the associated Christmas Tree apron; however, the demolition of Building 1303 for safety reasons within the Clear Zone and the associated mitigation measures documented in a previous EA (DAFB 2004a) mitigate the potential cumulative impact. The removal of Building 1303 for safety reasons would take place with or without the proposed construction of the new facility; therefore, the proposed action would have no cumulative impacts.

### **4.6 SAFETY**

#### **4.6.1 No Action Alternative**

Selecting the no action alternative would not result in impacts to occupational health and safety since no ground disturbing activities would occur.

#### **4.6.2 Proposed Action**

Implementing the proposed action would not result in adverse impacts to safety. Since no existing structures would be demolished as a part of the proposed action there would not be the potential for asbestos or lead-based paint contamination.

#### **4.6.3 Cumulative Impacts**

Implementing the proposed action or no action alternative would not result in cumulative impacts to safety. Regardless of action chosen, proper safety measures would be taken with all construction activities within the planning horizon. Airfield safety would improve by the removal of Building 1303, that currently lies within the Clear Zone.

## 4.7 HAZARDOUS MATERIALS AND SUBSTANCES

### 4.7.1 No Action Alternative

Implementing the no action alternative would result in no impacts from hazardous materials or substance since no construction activities would occur. Existing levels of hazardous materials or wastes from ongoing operations would be maintained and disposed of in accordance with appropriate regulations.

### 4.7.2 Proposed Action

Implementing the proposed action could disturb and/or generate hazardous wastes, consume hazardous materials, and/or disturb known hazardous materials facilities (i.e., Landfill 19). Hazardous materials utilized during the construction activities would likely include fuels, paints, glues, asphalt materials, etc. Most of these materials would typically be consumed in their entirety and very little waste generated for disposal. As a result, no significant amounts of construction-related hazardous materials would be expected, and any hazardous materials generated during the activities would be disposed of in accordance with all applicable Federal, state, and local regulations. Following construction, new Aero Club operations are anticipated to be similar to that of the existing facility. As a result, there would be no substantial additional types or quantities of hazardous materials/wastes created or utilized at the new Aero Club.

One IRP site, Landfill 19, is located near the site for the proposed construction and a small portion may underlay the existing paved aircraft ramp. However, the site designated for construction is outside of the IRP site (Deramo 2004). Although no contaminants are thought to be in the project area, if any contaminated soils or contaminated groundwater is encountered, it would be remediated and properly disposed of in accordance with Air Force regulations. Therefore, there would be no impact from potentially existing hazardous substances or material.

### 4.7.3 Cumulative Impacts

Implementing the proposed action or no action alternative would not result in cumulative impacts from hazardous materials or substances. All hazardous materials and substances would be handled and disposed of according to all applicable guidelines and regulations.

**SECTION 4.0**  
**ENVIRONMENTAL CONSEQUENCES**

---

*This page intentionally left blank*

## SECTION 5.0 LIST OF PREPARERS

<u>Name/Title</u>	<u>Expertise/Experience</u>	<u>Involvement</u>
Dana Banwart <i>Air Quality Specialist</i>	NEPA Studies <i>5 years</i>	Air Quality
Donna DeYoung <i>Hazardous Materials Specialist</i>	Hazardous Materials <i>5 years</i>	Water Resources Biological Resources Safety Hazardous Materials and Substances
Kurt Hellauer <i>NEPA Project Manager</i> <i>Land Use Specialist</i>	Land Use Planning/ Airspace Analysis <i>15 years</i>	Project Management Purpose and Need Alternatives Land Use Noise
Duane Peter <i>Archeologist</i>	Archeology <i>30 years</i>	Historic or Archeological Resources
Rae Lynn Schneider <i>Economist</i>	NEPA Studies Economic Analysis <i>7 years</i>	Socioeconomic Resources

**SECTION 5.0**  
**LIST OF PREPARERS**

---

*This page intentionally left blank*

## **SECTION 6.0      DISTRIBUTION LIST AND AGENCIES AND INDIVIDUALS CONTACTED**

### **6.1      DISTRIBUTION OF THE DRAFT ENVIRONMENTAL ASSESSMENT**

As part of CEQ regulations (§1503.1), public comments on the Draft EA are invited. This process helps decision makers and the public to understand and have input on the environmental effects of Federal actions. This EA was distributed to the following local libraries and individuals for public review and comment during the public review period from January 10, 2005 to February 10, 2005.

Delaware Division of Libraries  
43 South DuPont Highway  
Dover, DE 19901  
302-739-4748  
<http://www.state.lib.de.us>

Mr. Mark Gould, Tribal Chairman  
Nanticoke Lenni-Lenape Indians  
18 East Commerce Street  
PO Box 544  
Bridgeton, NJ 08302

Mr. Larry Joe Brooks  
Delaware Tribe of Indians  
220 Northwest Virginia Avenue  
Bartlesville, OK 74003

Mr. Daniel Griffith  
State of Delaware  
Delaware State Historic Preservation Office  
15 The Green  
Dover, DE 19901

Mr. Bruce Gonzales, President  
Delaware Nation  
PO Box 825  
Anadarko, OK 73005

### **6.2      COMMENTS AND RESPONSES TO COMMENTS**

No comments were received from any agencies or members of the public during the draft EA review period.

**SECTION 6.0**  
**DISTRIBUTION LIST AND AGENCIES AND INDIVIDUALS CONTACTED**

---

*This page intentionally left blank*

## SECTION 7.0 REFERENCES

- Benner, R. October 2004. Personal communication between Ms. Rayanne Benner (436 CES/CEV, Dover AFB Delaware) and Ms. Rae Lynn Schneider (Geo-Marine, Inc.).
- Bureau of Economic Analysis (BEA). 2004a. CA05-Personal Income by Major Source and Earnings by Industry-Kent County, Delaware. Regional Accounts Data. Local Area Personal Income. <http://www.bea.doc.gov/bea/regional/reis/action.cfm>. Accessed 19 October 2004.
- Bureau of Economic Analysis (BEA). 2004b. CA25-Total Full-Time and Part-Time Employment by Industry-Kent County, Delaware. Regional Accounts Data. Local Area Personal Income. <http://www.bea.doc.gov/bea/regional/reis/ action.cfm>. Accessed 19 October 2004.
- City of Dover, Delaware. 2003. The Dover Plan, From the People – For the People. City of Dover, Delaware Comprehensive Plan. Draft. July.
- Council on Environmental Quality (CEQ). 1993. Incorporating Biodiversity Considerations into Environmental Impact Analysis under the National Environmental Policy Act. January.
- Council on Environmental Quality (CEQ). 1997. Environmental Justice. Guidance under the National Environmental Policy Act. 10 December.
- Department of Natural Resources and Environmental Control (DNREC). 2001. Air Quality Management, Key Objectives. [http://www.dnrec.state.de.us/air/aqm\\_page/key\\_objs.htm](http://www.dnrec.state.de.us/air/aqm_page/key_objs.htm). Accessed 13 October 2004.
- Department of Natural Resources and Environmental Control (DNREC). 2002. Delaware Annual Air Quality Report. Air Quality Management Section, Division of Air and Waste Management. Document No. 40-09-02/03/09/01.
- Department of Natural Resources and Environmental Control (DNREC). 2004. Delaware Air Quality Monitoring Network. [http://www.dnrec.state.de.us/air/aqm\\_page/airmont /Air.asp](http://www.dnrec.state.de.us/air/aqm_page/airmont /Air.asp). Accessed 15 October 2004.
- Deramo, J. November 2004. Personal communication between Ms. JoAnne Deramo (436 CES/CEV, Dover AFB, Delaware) and Mr. Kurt M. Hellauer (Geo-Marine, Inc.).
- Dover Air Force Base (DAFB). 2002. Needs Assessment Study Aero Club Hangar & Operations Facility. Strategic Planning Group Inc. December.
- Dover Air Force Base (DAFB). 2004a. Environmental Assessment to Demolish Facility 1303. September.

SECTION 7.0  
REFERENCES

---

- Dover Air Force Base (DAFB). 2004b. Memorandum of Agreement Between Dover Air Force Base and The Delaware State Historic Preservation Officer Regarding the Demolition of Building 1303 at Dover Air Force Base, Delaware. 24 August.
- El Dorado County Air Pollution Control District. 2002. Guide to Air Quality Assessment, Determining Significance of Air Quality Impacts, Chapter 4: Construction Activities – Air Quality Impacts and Mitigation. February.
- Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1. Department of the Army, Waterways Experiment Station, Vicksburg. 100 p.
- Jones and Stokes Associates. 2003. Software User's Guide: URBEMIS2002 for Windows with Enhanced Construction Module. Version 7.4 Emissions Estimation for Land Use Development Projects. May.
- Lauria, T.P. 2003. History of Dover Air Force Base and the Heritage of the 436<sup>th</sup> Airlift Wing. <http://homepages.apci.net/~80tcs/Heritage.htm>. Accessed 29 September 2004.
- Leister, M. February 2005. Personal communication between Mr. Michael Leister (436 AW/MU) and Mr. Kurt M. Hellauer (Geo-Marine, Inc.).
- U.S. Census Bureau (USCB). 1993. 1990 Census of Population and Housing. Detailed Tables P001, P008, P010, P012, P080A, P117, H001, and H004. <http://factfinder.census.gov>. Accessed 19 October 2004.
- U.S. Census Bureau (USCB). 1995. Poverty Areas. Statistical Brief. <http://www.census.gov/population/socdemo/statbriefs/povarea.html>. June. Accessed 25 September 2001.
- U.S. Census Bureau (USCB). 2001. Overview of Race and Hispanic Origin. Census 2000 Brief. C2KBR/01-1. March.
- U.S. Census Bureau (USCB). 2002. 2000 Census of Population and Housing. Demographic Profile. Tables P1, P5, P6, P7, P9, P14, P53, P77, P82, P87, H1, H4, H6, H18, H35, H54, H56, H63, H70, H76, H85. <http://www.factfinder.census.gov>. Accessed 19 October 2004.
- U.S. Environmental Protection Agency (EPA). 2004a. National Primary and Secondary Ambient Air Quality Standards. <http://www.epa.gov/oar/oaqps/greenbk/40cfr50.html>. Accessed 13 October 2004.
- U.S. Environmental Protection Agency (EPA). 2004b. Nonattainment Status for Each County by Year. <http://www.epa.gov/oar/oaqps/greenbk/anay.html>. Accessed 13 October 2004.

## SECTION 8.0 ACRONYMS AND ABBREVIATIONS

436 AW	436 <sup>th</sup> Airlift Wing
AAFES	Army and Air Force Exchange Service
ACHP	Advisory Council on Historic Preservation
ACM	asbestos-containing material
AFB	Air Force Base
AFI	Air Force Instruction
AFOSH	Air Force Occupational and Environmental Safety, Fire Protection, and Health
AFPD	Air Force Policy Directive
AHPA	Archeological and Historic Preservation Act
AICUZ	Air Installation Compatible Use Zone
Air Force	United States Air Force
AOA	airfield operation area
AQI	Air Quality Index
ARPA	Archeological Resources Protection Act
BEA	Bureau of Economic Analysis
bgs	below ground surface
BMP	best management practice
CAA	Clean Air Act
CCR	Certified Construction Reviewer
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CO	carbon monoxide
CWA	Clean Water Act
dB	decibel
DNL	average day-night sound level
DNREC	Department of Natural Resources and Environmental Compliance
EA	environmental assessment
EIAP	Environmental Impact Analysis Process
EIS	environmental impact statement
EO	Executive Order
EPA	United States Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
FEMA	Federal Emergency Management Agency
FIRE	finance, insurance, and real estate
FONSI	finding of no significant impact
FWPCA	Federal Water Pollution Control Act
FY	fiscal year
IRP	Installation Restoration Program

**SECTION 8.0**  
**ACRONYMS AND ABBREVIATIONS**

---

LEP	limited English proficiency
MWR	Morale, Welfare and Recreation
NAAQS	National Ambient Air Quality Standards
NAF	non-appropriated funds
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NOI	Notice of Intent
NO <sub>x</sub>	nitrous oxides
NPDES	National Pollutant Discharge and Elimination System
NRHP	National Register of Historic Places
O <sub>3</sub>	ozone
OU	operating unit
Pb	lead
PCE	tetrachloroethylene
PM <sub>10</sub>	particulate matter measuring less than 10 microns in diameter
RCRA	Resource Conservation and Recovery Act
RI	remedial investigation
ROD	record of decision
ROG	reactive organic gases
ROI	region of influence
SAC	Strategic Air Command
SARA	Superfund Amendments and Reauthorization Act
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SO <sub>2</sub>	sulfur dioxide
TCE	trichloroethylene
USACE	U.S. Army Corps of Engineers
USAF	United States Air Force
USC	United States Code
USCB	U.S. Census Bureau
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VOC	volatile organic compound

---

---

**APPENDIX A:**  
**AIR FORCE FORM 813**

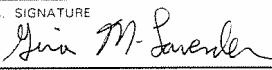
---

---

## APPENDICES

---

*This page intentionally left blank*

REQUEST FOR ENVIRONMENTAL IMPACT ANALYSIS		Report Control Symbol RCS:
INSTRUCTIONS: Section I to be completed by Proponent; Sections II and III to be completed by Environmental Planning Function. Continue on separate sheets as necessary. Reference appropriate item number(s).		
SECTION I - PROPOSER INFORMATION		
1. TO (Environmental Planning Function) 436 SPTG/CEV	2. FROM (Proponent organization and functional address symbol) 436 SPTG/CECP	2a. TELEPHONE NO 677-4712
3. TITLE OF PROPOSED ACTION FJXT935002, Construct Aero Club Facility		
4. PURPOSE AND NEED FOR ACTION (Identify decision to be made and need date) Aero club shares hangar space with the Base Museum, Security Forces, and the 512th. Space is limited and aircraft in maintenance can't be secured. The hangar is located on the opposite end of the base from the Aero Club.		
5. DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES (DOPAA) (Provide sufficient details for evaluation of the total action.) Construct a Flight Training Center (Aero Club) Hangar/Admin areas.		
6. PROPOSER APPROVAL (Name and Grade) Gina M. Lavender Project Programmer	6a. SIGNATURE 	6b. DATE 20031215
SECTION II - PRELIMINARY ENVIRONMENTAL SURVEY. (Check appropriate box and describe potential environmental effects including cumulative effects.) (+ = positive effect; O = no effect; - = adverse effect; U = unknown effect)		
7. AIR INSTALLATION COMPATIBLE USE ZONE/LAND USE (Noise, accident potential, encroachment, etc.) <input checked="" type="checkbox"/> X		
8. AIR QUALITY (Emissions, attainment status, state implementation plan, etc.) <input type="checkbox"/> X		
9. WATER RESOURCES (Quality, quantity, source, etc.) <input type="checkbox"/> X		
10. SAFETY AND OCCUPATIONAL HEALTH (Asbestos/radiation/chemical exposure, explosives safety quantity/distance, bird/wildlife/aircraft hazard, etc.) <input checked="" type="checkbox"/> X		
11. HAZARDOUS MATERIALS/WASTE (Use/storage/generation, solid waste, etc.) <input type="checkbox"/> X		
12. BIOLOGICAL RESOURCES (Wetlands/floodplains, threatened or endangered species, etc.) <input type="checkbox"/> X		
13. CULTURAL RESOURCES (Native American burial sites, archaeological, historical, etc.) <input type="checkbox"/> X		
14. GEOLOGY AND SOILS (Topography, minerals, geothermal, Installation Restoration Program, seismicity, etc.) <input type="checkbox"/> X		
15. SOCIOECONOMIC (Employment/population projections, school and local fiscal impacts, etc.) <input checked="" type="checkbox"/> X		
16. OTHER (Potential impacts not addressed above.) <input type="checkbox"/> X		
SECTION III - ENVIRONMENTAL ANALYSIS DETERMINATION		
17. <input checked="" type="checkbox"/> PROPOSED ACTION QUALIFIES FOR CATEGORICAL EXCLUSION (CATEX) # _____ ; OR <input checked="" type="checkbox"/> PROPOSED ACTION DOES NOT QUALIFY FOR A CATEX; FURTHER ENVIRONMENTAL ANALYSIS IS REQUIRED.		
18. REMARKS Dover AFB is in a severe non-attainment area for ozone. The air pollutants of concern are nitrogen oxides (NOx) and volatile organic compounds (VOCs). This project will not produce or cause to be produced or released, directly or indirectly, any NOx or VOC. Therefore, a Clean Air Act Section 176(c) Conformity Determination is not required.		
19. ENVIRONMENTAL PLANNING FUNCTION CERTIFICATION (Name and Grade) CHARLES C. MIKULA, P.E. Environmental Flight Chief	19a. SIGNATURE 	19b. DATE 22 SEP 01

AF FORM 813, 19990901 (EF-V1)

THIS FORM CONSOLIDATES AF FORMS 813 AND 814.  
PREVIOUS EDITIONS OF BOTH FORMS ARE OBSOLETE.

PAGE 1 OF

PAGE 51

APPENDICES

---

*This page intentionally left blank*

---

---

## **APPENDIX B:**

### **AIR QUALITY MODELING DATA**

---

---

APPENDICES

---

*This page intentionally left blank*

Page: 1

model results no demo

## URBEMIS 2002 For Windows 7.5.0

File Name: D:\Air Quality Models\URBEMIS\Projects2k2\Aero Club no demo.urb  
 Project Name: Aero Club EA  
 Project Location: Dover AFB  
 On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT  
(Tons/Year)

## CONSTRUCTION EMISSION ESTIMATES

*** 2005 *** TOTALS (tpy, unmitigated)	ROG	NOX	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
	0.50	4.20	3.76	0.00	0.26	0.24	0.02
*** 2006 *** TOTALS (tpy, unmitigated)	ROG	NOX	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
	0.35	1.98	1.92	0.00	0.06	0.06	0.00

## AREA SOURCE EMISSION ESTIMATES

TOTALS (tpy, unmitigated)	ROG	NOX	CO	SO2	PM10
	0.02	0.15	0.10	0.00	0.00

Page: 2

## URBEMIS 2002 For Windows 7.5.0

File Name: D:\Air Quality Models\URBEMIS\Projects2k2\Aero Club no demo.urb  
 Project Name: Aero Club EA  
 Project Location: Dover AFB  
 On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT  
(Tons/Year)

Construction Start Month and Year: January, 2005  
 Construction Duration: 18  
 Total Land Use Area to be Developed: 0.3 acres  
 Maximum Acreage Disturbed Per Day: 0.1 acres  
 Single Family Units: 0 Multi-Family Units: 0  
 Retail/Office/Institutional/Industrial Square Footage: 6000

## CONSTRUCTION EMISSION ESTIMATES UNMITIGATED (tons/year)

Source *** 2005***	ROG	NOX	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
<b>Phase 1 - Demolition Emissions</b>							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons/year	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Phase 2 - Site Grading Emissions</b>							
Fugitive Dust	-	-	-	-	0.02	-	0.02
Off-Road Diesel	0.10	0.80	0.64	-	0.04	0.04	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.02	0.00	0.00	0.00	0.00
Total tons/year	0.10	0.80	0.66	0.00	0.06	0.04	0.02
<b>Phase 3 - Building Construction</b>							
Bldg Const Off-Road Diesel	0.40	3.40	3.10	-	0.20	0.20	0.00
Bldg Const Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00

Page 1

## APPENDICES

---

			model	results	no demo		
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons/year	0.40	3.40	3.10	0.00	0.20	0.20	0.00
Total all phases tons/yr	0.50	4.20	3.76	0.00	0.26	0.24	0.02
<b>*** 2006***</b>							
<b>Phase 1 - Demolition Emissions</b>							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons/year	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Phase 2 - Site Grading Emissions</b>							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons/year	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Phase 3 - Building Construction</b>							
Bldg Const Off-Road Diesel	0.24	1.98	1.92	-	0.06	0.06	0.00
Bldg Const Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Arch Coatings Off-Gas	0.11	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons/year	0.35	1.98	1.92	0.00	0.06	0.06	0.00
Total all phases tons/yr	0.35	1.98	1.92	0.00	0.06	0.06	0.00

Page: 3

### Phase 1 - Demolition Assumptions: Phase Turned OFF

### Phase 2 - Site Grading Assumptions

Start Month/Year for Phase 2: Jan '05

Phase 2 Duration: 2 months

On-Road Truck Travel (VMT): 0

### Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Rubber Tired Dozers	352	0.590	8.0
1	Tractor/Loaders/Backhoes	79	0.465	8.0

### Phase 3 - Building Construction Assumptions

Start Month/Year for Phase 3: Mar '05

Phase 3 Duration: 16 months

Start Month/Year for SubPhase Building: Mar '05

Subphase Building Duration: 16 months

### Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Concrete/Industrial saws	84	0.730	8.0
1	Other Equipment	190	0.620	8.0
1	Rough Terrain Forklifts	94	0.475	8.0

Start Month/Year for SubPhase Architectural Coatings: May '06

Subphase Architectural Coatings Duration: 1.6 months

Start Month/Year for SubPhase Asphalt: Jun '06

SubPhase Asphalt Duration: 0.8 months

Acres to be Paved: 0.1

### Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day

Page: 4

Page 2

AREA SOURCE EMISSION ESTIMATES		model results no demo				
Source		ROG	NOX	CO	SO2	PM10
Natural Gas		0.01	0.15	0.06	-	0.00
Wood Stoves		0.00	0.00	0.00	0.00	0.00
Fireplaces		0.00	0.00	0.00	0.00	0.00
Landscaping		0.01	0.00	0.04	0.00	0.00
Consumer Prdcts		0.00	-	-	-	-
TOTALS (tpy, unmitigated)		0.02	0.15	0.10	0.00	0.00

Page: 5

Changes made to the default values for Land Use Trip Percentages

Changes made to the default values for Construction

Changes made to the default values for Area

The landscape year changed from 2004 to 2006.

APPENDICES

---

*This page intentionally left blank*

---

---

## **APPENDIX C: REPRESENTATIVE PHOTOGRAPHS**

---

---

APPENDICES

---

*This page intentionally left blank*



Photograph 1: Building 1303 looking NE



Photograph 2: Parking apron S of Building 1303

## APPENDICES



Photograph 3: Grassy area adjacent to Christmas Tree, SE



Photograph 4: Utility pole adjacent to Apron 6, ESE



Photograph 5: Grassy area adjacent to Christmas Tree, SW



Photograph 6: Building 918

## APPENDICES

---



Photograph 7: Building 918



Photograph 8: Building 918



Photograph 9: Building 1315



Photograph 10: Building 1315

## APPENDICES



Photograph 11: Grassy area adjacent to Christmas Tree, NW



Photograph 12: Grassy area adjacent to Christmas Tree, WNW

---

---

**APPENDIX D:**  
**NOTICE OF AVAILABILITY AND AFFIDAVIT OF**  
**PUBLICATION**

---

---

APPENDICES

---

*This page intentionally left blank*

# Independent Newspapers, Inc.

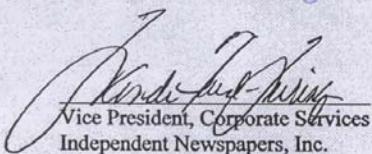
P.O. Box 7001 • Dover, Delaware • 19903 • 1-800-282-8586

State of Delaware:

:ss.

Counties of Kent:

Before me, a Notary Public, for the County and State aforesaid, Wanda Ford-Waring, known to me to be such, who being sworn according to law deposes and says that she is an officer of Independent Newspaper Inc, the Publisher of the **The Delaware State News**, a daily newspaper published at Dover, County of Kent, and State of Delaware, and that the notice, a copy of which is hereto attached, as published in the **The Delaware State News** in its issue of January 9 & 12, 2005.



Vice President, Corporate Services  
Independent Newspapers, Inc.

Sworn to and subscribed before me this

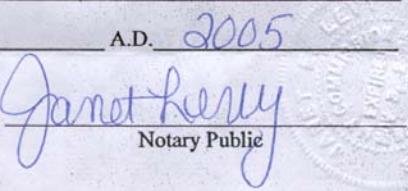
12th

Day of

January

A.D.

2005

Janet Henry  
Notary Public

DRAFT ENVIRONMENTAL ASSESSMENT FOR  
PROPOSED CONSTRUCTION AND OPERATION OF  
A NEW AERO CLUB FACILITY AT  
DOVER AIR FORCE BASE, DELAWARE

Pursuant to the Council on Environmental Quality regulations implementing procedural provisions of the National Environmental Policy Act, the Department of the Air Force gives notice that a Draft Environmental Assessment (EA) has been prepared for a proposal to construct a new facility for an existing Aero Club on Dover AFB, Delaware. A Finding of No Significant Impact may result from the preparation of this EA, and if signed, indicates that no significant impacts to the environment are expected from carrying out the proposed action and therefore an Environmental Impact Statement would not be required or prepared.

The Draft EA for this action is on file at Dover Air Force Base and interested parties may obtain a copy from: Mr. Steven Seip, 436 CES/CEV, 600 Chevron Avenue, Dover AFB, DE 19902-5600, (302) 677-6839. A copy of the document is also available for public inspection at the Dover Public Library during normal business hours. Written comments from interested parties may be sent to Mr. Seip until February 10, 2005.

546243 DSN 1/9/12/05

APPENDICES

---

*This page intentionally left blank*

---

---

## **APPENDIX E:**

### **INTERAGENCY COORDINATION LETTERS**

---

---

APPENDICES

---

*This page intentionally left blank*



DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 436<sup>TH</sup> AIRLIFT WING (AMC)

Charles C. Mikula, P.E.  
436 CES/CEV  
600 Chevron Ave  
Dover AFB DE 19902

JAN 06 2005

Mr. Larry Joe Brooks  
Delaware Tribe of Indians  
220 Northwest Virginia Avenue  
Bartlesville, OK 74003

Dear Mr. Brooks

The attached draft Environmental Assessment for the Construction & Operation of a New Aero Club Facility, dated December 2004, is provided for you and your staff to review. The document is in compliance with the requirements of 32 CFR § 989.14 and 989.15. We would appreciate receiving any comments you may have on this document by 10 February 2005.

Please contact myself at 677-4753 or Mr. Steve Seip at 677-6839 if you have any questions regarding this submittal.

Sincerely

CHARLES C. MIKULA, P.E.  
Chief, Environmental Flight

Attachment:

Draft Environmental Assessment for the Construction & Operation of a New Aero Club Facility  
(Dec 2004)

*America's P reeminent Expeditionary Airlift Team*

APPENDICES

---



**DEPARTMENT OF THE AIR FORCE**  
HEADQUARTERS 436<sup>TH</sup> AIRLIFT WING (AMC)

Charles C. Mikula, P.E.  
436 CES/CEV  
600 Chevron Ave  
Dover AFB DE 19902

JAN 06 2005

Mr. Bruce Gonzales, President  
Delaware Nation  
PO Box 825  
Anadarko, Oklahoma 73005

Dear Mr. Gonzales

The attached draft Environmental Assessment for the Construction & Operation of a New Aero Club Facility, dated December 2004, is provided for you and your staff to review. The document is in compliance with the requirements of 32 CFR § 989.14 and 989.15. We would appreciate receiving any comments you may have on this document by 10 February 2005.

Please contact myself at 677-4753 or Mr. Steve Seip at 677-6839 if you have any questions regarding this submittal.

Sincerely

A handwritten signature in black ink, appearing to read "Charles C. Mikula".

CHARLES C. MIKULA, P.E.  
Chief, Environmental Flight

Attachment:  
Draft Environmental Assessment for the Construction & Operation of a New Aero Club Facility  
(Dec 2004)

*America's Preeminent Expeditionary Airlift Team*



DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 436<sup>TH</sup> AIRLIFT WING (AMC)

Charles C. Mikula, P.E.  
436 CES/CEV  
600 Chevron Ave  
Dover AFB DE 19902

JAN 06 2005

Mr. Mark Gould, Tribal Chairman  
Nanticoke Lenni-Lenape Indians  
18 East Commerce Street  
P.O. Box 544  
Bridgeton, New Jersey 08302

Dear Mr. Gould

The attached draft Environmental Assessment for the Construction & Operation of a New Aero Club Facility, dated December 2004, is provided for you and your staff to review. The document is in compliance with the requirements of 32 CFR § 989.14 and 989.15. We would appreciate receiving any comments you may have on this document by 10 February 2005.

Please contact myself at 677-4753 or Mr. Steve Seip at 677-6839 if you have any questions regarding this submittal.

Sincerely

CHARLES C. MIKULA, P.E.  
Chief, Environmental Flight

Attachment:  
Draft Environmental Assessment for the Construction & Operation of a New Aero Club Facility  
(Dec 2004)

*America's Preeminent Expeditionary Airlift Team*



DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 436<sup>TH</sup> AIRLIFT WING (AMC)

Charles C. Mikula, P.E.  
436 CES/CEV  
600 Chevron Ave  
Dover AFB DE 19902

JAN 06 2005

Mr. Daniel Griffith  
Delaware State Historic Preservation Officer  
Delaware State Historic Preservation Office  
15 The Green  
Dover DE 19901

Dear Mr. Griffith

The attached draft Environmental Assessment for the Construction & Operation of a New Aero Club Facility, dated December 2004, is provided for you and your staff to review. The document is in compliance with the requirements of 32 CFR § 989.14 and 989.15. We would appreciate receiving any comments you may have on this document by 10 February 2005.

Please contact myself at 677-4753 or Mr. Steve Seip at 677-6839 if you have any questions regarding this submittal.

Sincerely

A handwritten signature in black ink, appearing to read "Charles C. Mikula".

CHARLES C. MIKULA, P.E.  
Chief, Environmental Flight

Attachment:  
Draft Environmental Assessment for the Construction & Operation of a New Aero Club Facility  
(Dec 2004)